

İTÜ AI-AITR Taslak Çalışma



YAPAY ZEKA

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İçindekiler

1	Yapay Zeka Nedir?	4
2	Yapay Zeka Türleri	5
3	Yapay Zekanın Faydaları	5
4	Türkiye'de Yapay Zeka	5
5	Ülkelerde Yapay Zeka	7
6	Üniversitelerde Yapay Zeka	8
6.1	İstanbul Teknik Üniversitesi	8
6.2	Türkiye Genelinde Üniversitelerin Durumu	10
6.3	Dünya Genelinde Üniversitelerin Durumu	11
7	Yapay Zeka Alanında Patent	35
8	Akıllı Tarım , Orman Yangınları , Yapay Zekada Etik	38
8.1	Akıllı Tarım	38
8.2	Orman Yangınları	48
8.3	Yapay Zekada Etik	60

Tablo Listesi

Tablo 1 2021 ve 2022 Yıllarında Türkiye'de, Yapay Zeka Alanında Yayın Yapan Üniversielerin Yayın Sayıları	10
Tablo 2 2021 ve 2022 Yıllarında Dünyada, Yapay Zeka Alanında En Çok Yayın Yapan İlk 50 Ülke	12
Tablo 3 2021 ve 2022 Yıllarında Dünyada, Yapay Zeka Alanında En Çok Yayın Yapan İlk 100 Üniversite ve Enstitü	13
Tablo 4 Dünya'da En Çok Yayın Yapılan Yapay Zeka ile İlgili Başlıklar	15
Tablo 5 Algorithms; Computer Vision; Models	17
Tablo 6 Semantics; Models; Recommender Systems	19
Tablo 7 Stroke; Gait; Rehabilitation	20
Tablo 8 Classification (Of Information); Learning Systems; Algorithms	22
Tablo 9 Decision Making; Fuzzy Sets; Models	24
Tablo 10 Models; Social Networking (Online); Algorithms	26
Tablo 11 Robots; Robotics; Manipulators	28
Tablo 12 Speech; Speech Recognition; Models	29
Tablo 13 Optimization; Algorithms; Evolutionary Algorithms	31
Tablo 14 Multi Agent Systems; Motion Planning; Robots	33

Tablo 15 2021 ve 2022 Yıllarında, Dünyada Yapay Zeka Alanında Alınan Patentler.....	35
Tablo 16 Dünyada 2020-2022 Yıllarında Smart Agriculture Alanında Yapılmış En Çok Atif Alan 50 Makale Listesi	38
Tablo 17 Türkiye'de 2020-2022 Yıllarında Smart Agriculture Alanında Yapılmış En Çok Atif Alan Makalelenin Listesi	44
Tablo 18 Dünyada 2020-2022 Yıllarında AI Ethics Alanında Yapılmış En Çok Atif Alan 50 Makale Listesi ..	48
Tablo 19 Türkiye'de 2020-2022 Yıllarında Wildfire Alanında Yapılmış En Çok Atif Alan Makalelerin Listesi	56
Tablo 20 Dünya'da 2020-2022 Yıllarında AI Ethics Alanında Yapılmış En Çok Atif Alan 50 Makale Listesi .	60
Tablo 21 Türkiye'de 2020-2022 Yıllarında AI Ethics Alanında Yapılmış En Çok Atif Alan Makalelerin Listesi	66

Şekil Listesi

Şekil 1 Yapay Zekanın Gelişim Süreci	4
Şekil 2 UYZS Stratejik Öncelikler	6
Şekil 3 Ülkelerin Akademi-Özel Sektör Yayın Sayısı ve YZ Alıntı Etkisi, 2014-2018	7
Şekil 4 Yapay Zeka Alanında Yayın Bazlı Alan/Alt Alan Dağılımı.....	8

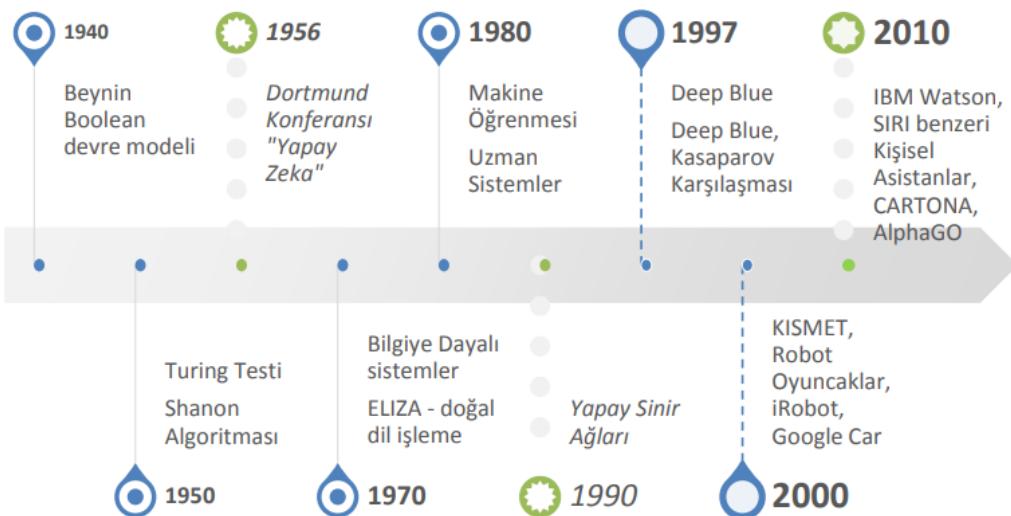
Öz

Yapay zeka günümüzde önemli yere sahip bir araştırma alanı olmakla birlikte bir çok sektörde yapay zeka kullanımı günden güne artmaktadır. Bu çalışmada Türkiye'nin, diğer ülkelerin ve üniversitelerin bu alandaki durumları incelenmiş olup içerisinde paylaşılan veriler 2019-2022 yılları arası Scopus verileri baz alınarak hazırlanmıştır.

1 Yapay Zeka Nedir?

Yapay zeka, bilgisayar sisteminin öğrenme ve sorun çözme gibi insan benzeri bilişsel işlevleri taklit edebilme becerisi olarak tanımlanmaktadır. Yapay zeka akıllı programlama ve insansı tepkiler olmak üzere temel iki kavram üzerine yerleştirilebilir.

Şekil 1 Yapay Zekanın Gelişim Süreci



2 Yapay Zeka Türleri

- **Yapay dar zeka (Dar AI)**

Yapay dar zeka (bazen “zayıf yapay zeka” olarak adlandırılır), bilgisayar sisteminin dar kapsamlı olarak tanımlanmış bir görevi insanlardan daha iyi yerine getirebilme becerisini ifade eder.

- **Yapay genel zeka (Genel AI)**

Yapay genel zeka (bazen “güçlü yapay zeka” veya “insan düzeyi yapay zeka” olarak adlandırılır), bilgisayar sisteminin tüm zihinsel görevlerde insanlardan daha başarılı olması anlamına gelir.

- **Yapay süper zeka (ASI)**

Yapay süper zeka düzeyine ulaşmış bir bilgisayar sistemi; bilimsel yaratıcılık, genel bilgelik ve sosyal beceriler dahil olmak üzere hemen her alanda insanlardan daha başarılı olacaktır.

3 Yapay Zekanın Faydaları

Yapay zekâ, bir insanın yapabileceği bazı görevleri daha fazla veriyle daha hızlı bir şekilde yapılmasına imkân tanıyarak, hayatımıza kolaylaştırmaktadır. Yapay zeka günümüzde bir çok sektörde kullanılmaktadır. Yapay zekâ; sesli asistanlar, dil çevirileri, öneri sistemleri, navigasyon, sosyal güvenlik, sağlık hizmetleri, e-ticaret ve yardımcı robot uygulamalarıyla sektörde yer almaktadır. Ayrıca güvenlik ve savunma sanayi gibi sektörde özel stratejik çalışmalarında da kullanılmaktadır. Yapay zekanın sürekli kullanılabilirlik, büyük ölçekte iletişim, yinelenen görevlerin otomasyonu, daha hızlı ve daha doğru kararlar, kişilere daha ilgili öneri sunma, veri setlerinden anlamlı sonuçlar çıkarma gibi bir çok avantajı bulunmaktadır.

4 Türkiye'de Yapay Zeka

Ulusal Yapay Zekâ Stratejisi 2021-2025

Ulusal yapay zeka stratejisi 2021-2025 kararı 2021 yılında yürürlüğe girmiştir. Ulusal Yapay Zeka Stratejisi (UYZS) yapay zeka alanında ülkemizin ilk ulusal strateji belgesi olma özelliğini taşıyarak yapay zeka stratejisini yayımlayan ülkeler arasında girmiştir. UYZS, Dijital Türkiye ve Milli Teknoloji Hamlesi ile uyumlu şekilde hazırlanmıştır.

UYZS 6 stratejik öncelik baz alınarak hazırlanmıştır.

1. YZ Uzmanlarını Yetiştirmek ve Alanda İstihdamı Artırmak
2. Araştırma, Girişimcilik ve Yenilikçiliği Desteklemek
3. Kaliteli Veriye ve Teknik Altyapıya Erişim İmkânlarını Genişletmek
4. Sosyoekonomik Uyumu Hızlandıracak Düzenlemeleri Yapmak
5. Uluslararası İş Birliklerini Güçlendirmek
6. Yapısal ve İşgücü Dönüşümünü Hızlandırmak

Sekil 2 UYZS Stratejik Öncelikler



Bu kapsamda 24 amaç ve 119 tedbir belirlenmiştir.

UYZS'nin uygulama döneminin sonu olan 2025 yılında ulaşılması beklenen üst seviye hedefler şu şekildedir;

- YZ alanının GSYH'ye katkısı %5'e yükseltilecektir.
- YZ alanında istihdam 50.000 kişiye çıkarılacaktır.
- Merkezî ve yerel yönetim kamu kurum ve kuruluşlarında YZ alanında istihdam 1.000 kişiye çıkarılacaktır.
- YZ alanında lisansüstü düzeyde mezun sayısı 10.000 kişiye çıkarılacaktır.
- Yerel ekosistemin geliştirdiği YZ uygulamalarının kamu alımlarında önceliklendirilerek ticarileştirilmesi desteklenecektir.

- Uluslararası kuruluşların güvenilir ve sorumlu YZ ile sınır ötesi veri paylaşımı alanındaki düzenleme çalışmalarına ve standartlaşma süreçlerine aktif olarak katkı verilecektir.
- Uluslararası YZ endekslerindeki sıralamalarda Türkiye'nin ilk 20 ülke arasında yer alması sağlanacaktır.

5 Ülkelerde Yapay Zeka

Günümüzde 60'tan fazla ülkenin yapay zeka stratejisi bulunmaktadır. Ekonomik ve stratejik olarak yapay zekanın önemini giderek daha fazla anlayan ülkeler, yapay zeka temelli uygulamalara büyük ölçüde yatırım yapmaktadır. Özellikle bu yatırımlar işbirliği ve insan odaklılık ve etik çevresinde şekillenmektedir.

Akademî-özel sektör iş birlikleri ile hazırlanan makalelerin sayısı ve etki değeri de yapay zekanın gelişimi açısından önemli yere sahiptir.

Şekil 3 Ülkelerin Akademî-Özel Sektör Yayın Sayısı ve YZ Alıntı Etkisi, 2014-2018

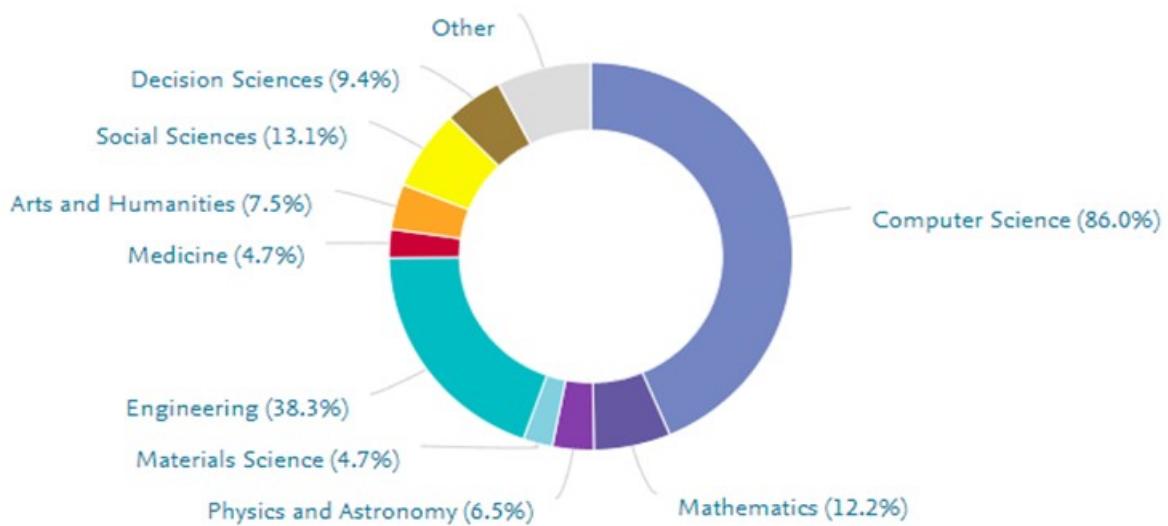


6 Üniversitelerde Yapay Zeka

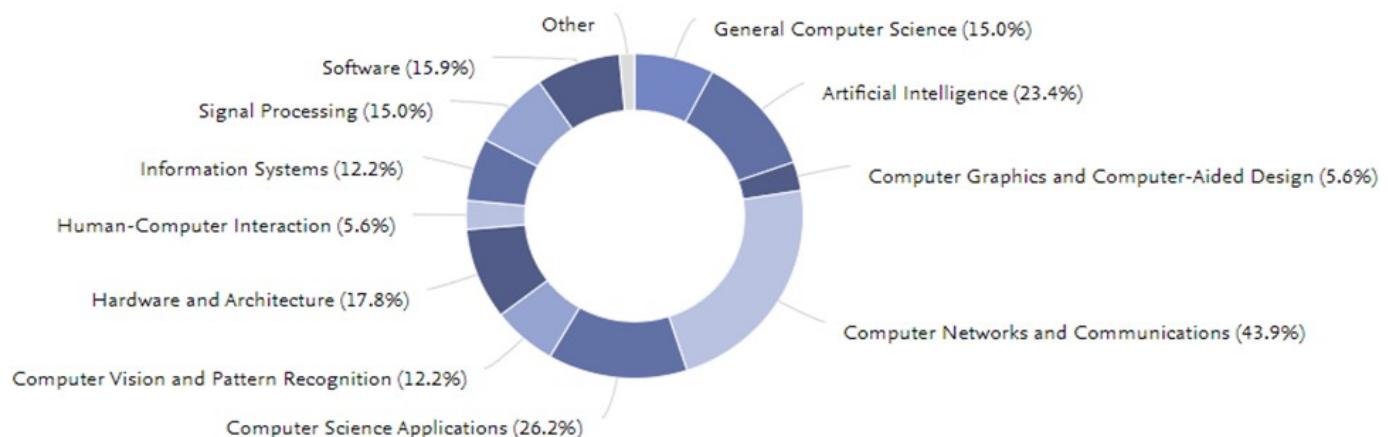
6.1 İstanbul Teknik Üniversitesi

Yapay zeka alanında yayın bazlı alan dağılımı aşağıdaki gibidir;

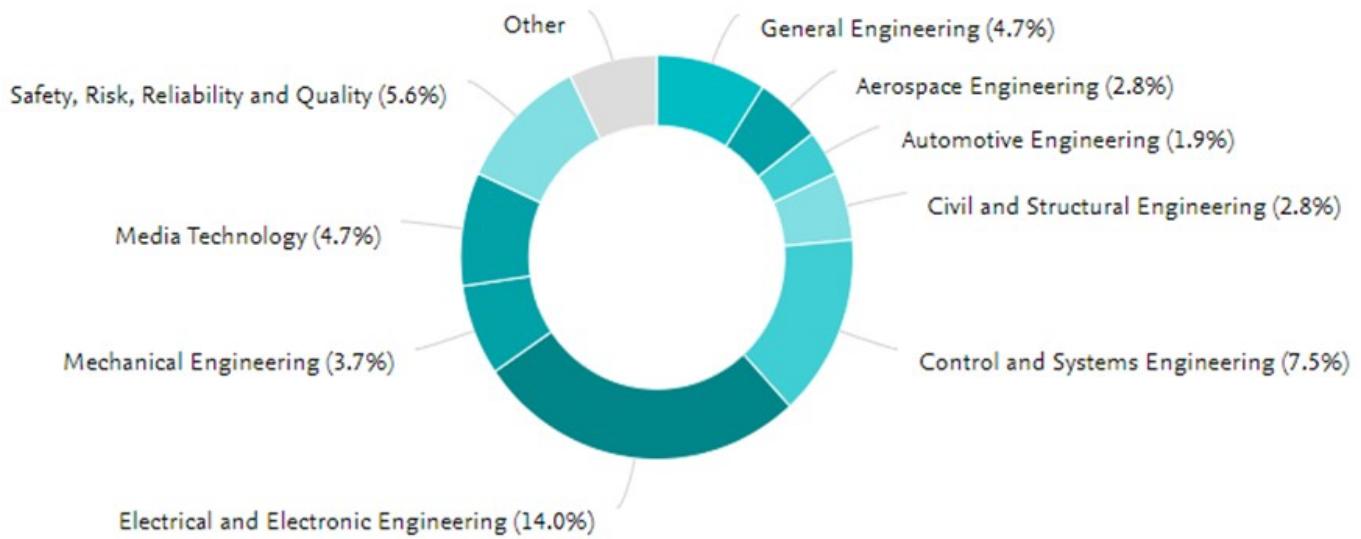
Şekil 4 Yapay Zeka Alanında Yayın Bazlı Alan/Alt Alan Dağılımı



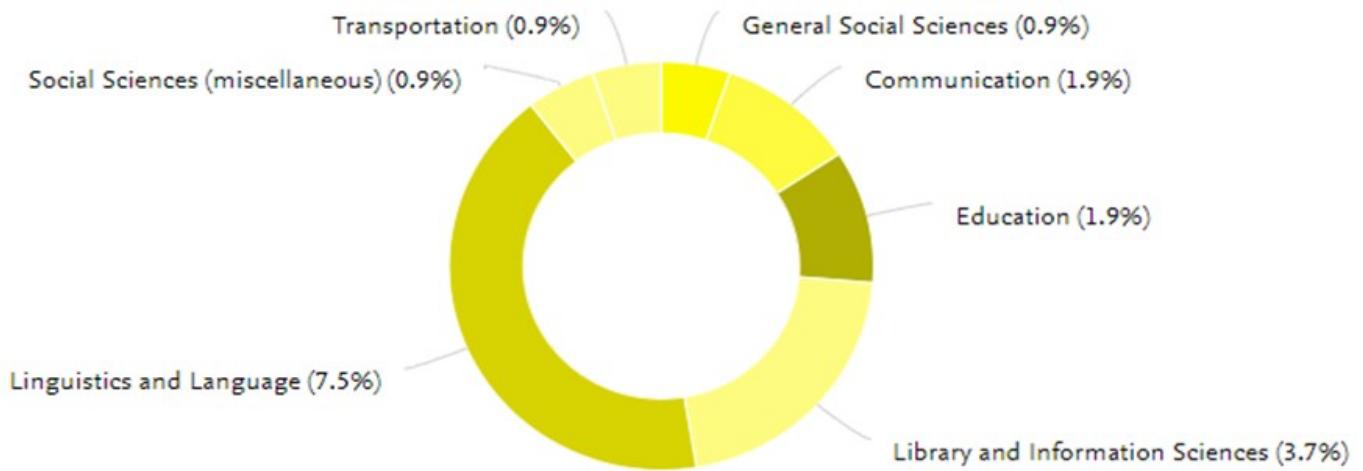
Computer Science



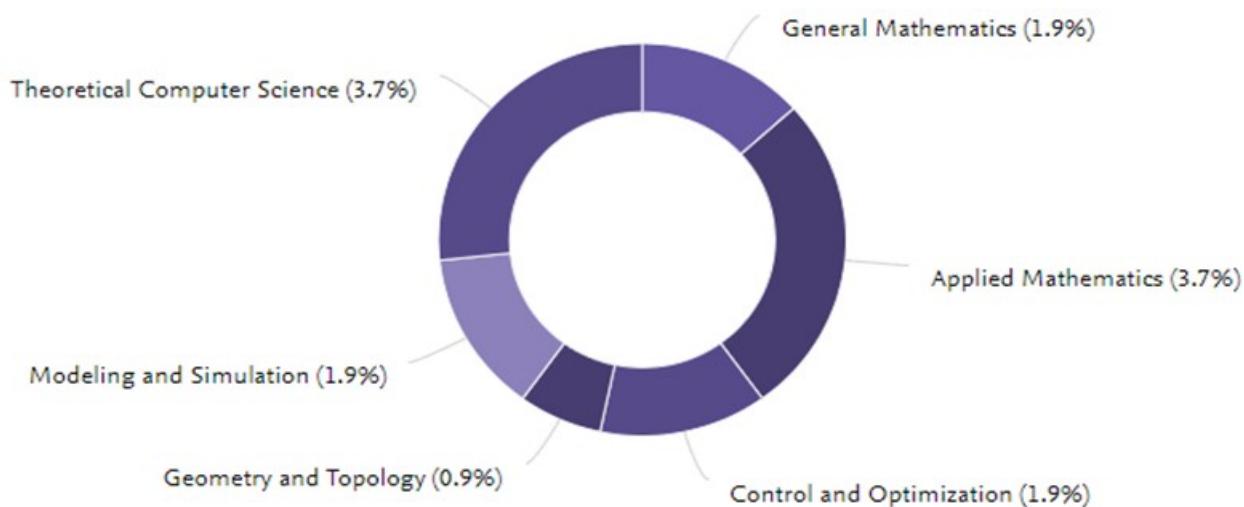
Engineering



Social Sciences



Mathematics



6.2 Türkiye Genelinde Üniversitelerin Durumu

2021 ve 2022 yıllarında Türkiye'de, yapay zeka alanında en çok yayın yapan üniversite İstanbul Teknik Üniversitesi'dir.

Tablo 1 2021 ve 2022 Yıllarında Türkiye'de, Yapay Zeka Alanında Yayın Yapan Üniversitelerin Yayın Sayıları

Institutions	Publications
Istanbul Technical University	80
Yildiz Technical University	51
Middle East Technical University	45
Karadeniz Technical University	44
Firat University	42
Gazi University	42
Bahcesehir University	33
Bilkent University	33
Bogazici University	32
Hacettepe University	27
Dokuz Eylul University	26
Konya Technical University	26
Near East University	26
Selcuk University	25

Koc University	21
Abant Izzet Baysal University	20
Duzce University	20
Marmara University	20
Erciyes University	19
Sabanci University	19
Turkish National Defence University	18
Istanbul University Cerrahpaşa	17
Istinye University	17
Sakarya University	17
Akdeniz University	16
Ege University	16
Uludag University	16
Izmir Bakircay University	15
Kocaeli University	15
Giresun Universitesi	14
Ozyegin University	14
Ankara University	13
Cukurova University	13
Osmangazi University	13
Cankaya University	12
Gaziantep University	12
Çankiri Karatekin University	12
Eskisehir Technical University	11
Galatasaray University	11
Mersin University	11
Ataturk University	10
Celal Bayar University	10
Izmir Ekonomi University	10
Mehmet Akif Ersoy University	10

6.3 Dünya Genelinde Üniversitelerin Durumu

2021 ve 2022 yıllarında dünyada, yapay zeka alanında en çok yayın yapan ilk 50 ülke içerisinde Türkiye 15. sırada yer almaktadır.

Tablo 2 2021 ve 2022 Yıllarında Dünyada, Yapay Zeka Alanında En Çok Yayın Yapan İlk 50 Ülke

Countries/Regions	Publications
China	24298
United States	7314
India	6061
United Kingdom	3456
Australia	2244
Germany	1963
Japan	1933
Italy	1763
Canada	1691
South Korea	1659
Spain	1645
Iran	1434
France	1428
Saudi Arabia	1167
Turkey	1114
Hong Kong	1089
Singapore	1003
Brazil	894
Taiwan	874
Pakistan	820
Netherlands	811
Malaysia	748
Poland	718
Switzerland	703
Egypt	557
Viet Nam	550
Russian Federation	505
Indonesia	465
Belgium	434
Greece	429
Mexico	419
Sweden	413
United Arab Emirates	413
Czech Republic	370
Portugal	364
Austria	359
Norway	334
Algeria	311
Finland	305
Israel	300
Iraq	298
Jordan	270
Denmark	269
Macao	249

Thailand	237
Morocco	231
New Zealand	220
Bangladesh	217
Tunisia	214
Ireland	212

2021 ve 2022 yıllarında dünyada, yapay zeka alanında en çok yayın yapan ilk 100 üniversite ve enstitü listesi aşağıdaki gibidir;

Tablo 3 2021 ve 2022 Yıllarında Dünyada, Yapay Zeka Alanında En Çok Yayın Yapan İlk 100 Üniversite ve Enstitü

Institutions	Publications
Chinese Academy of Sciences	1314
CNRS	814
University of Chinese Academy of Sciences	750
Anna University	701
Harbin Institute of Technology	669
Tsinghua University	661
University of Electronic Science and Technology of China	631
Xidian University	603
Northwestern Polytechnical University Xian	586
Zhejiang University	570
Northeastern University China	537
Beihang University	512
Shanghai Jiao Tong University	488
Wuhan University	478
Sichuan University	471
South China University of Technology	466
Beijing Institute of Technology	462
Southeast University, Nanjing	455
Nanyang Technological University	449
Huazhong University of Science and Technology	441
Xi'an Jiaotong University	422
Sun Yat-Sen University	406
CAS - Institute of Automation	401
University of Technology Sydney	399
Islamic Azad University	382
Nanjing University of Science and Technology	367
National University of Defense Technology	367

Nanjing University of Aeronautics and Astronautics	352
Chongqing University	350
Shenzhen University	349
Central South University	345
Tianjin University	341
Peking University	334
National University of Singapore	331
Dalian University of Technology	323
University of Science and Technology of China	315
City University of Hong Kong	310
Guangdong University of Technology	302
Shandong University	302
Beijing University of Posts and Telecommunications	299
Tongji University	297
Beijing Jiaotong University	294
Shanghai University	282
Swiss Federal Institute of Technology Zurich	279
King Abdulaziz University	276
Hefei University of Technology	273
Chongqing University of Posts and Telecommunications	271
Nanjing University	270
Vellore Institute of Technology	270
Hong Kong Polytechnic University	263
Imperial College London	255
Hunan University	254
Beijing University of Technology	247
Massachusetts Institute of Technology	247
Nanjing University of Information Science & Technology	245
Xiamen University	243
University of Oxford	241
Southwest Jiaotong University	238
University of Alberta	230
Fudan University	224
University of Sydney	224
Technical University of Munich	223
Carnegie Mellon University	222
Nanjing University of Posts and Telecommunications	212
Shandong University of Science and Technology	211
Chinese University of Hong Kong	209
Jilin University	209
Yonsei University	207
Hangzhou Dianzi University	205
The University of Tokyo	204
Southwest University	201

Stanford University	200
University of Macau	199
Anhui University	195
Institut national de recherche en informatique et en automatique	195
University of Granada	195
University of Science and Technology Beijing	195
University College London	186
Jiangnan University	183
University of New South Wales	183
Dalian Maritime University	181
Texas A&M University	180
Georgia Institute of Technology	177
China University of Mining and Technology	176
University of California at Berkeley	175
East China University of Science and Technology	174
Southern University of Science and Technology	174
Harvard University	171
Deakin University	169
The University of Hong Kong	169
Wuhan University of Technology	167
Delft University of Technology	166
Zhejiang University of Technology	166
Fuzhou University	164
Harbin Engineering University	163
Monash University	161
Shandong Normal University	161
China University of Geosciences, Wuhan	160
Nankai University	160
SRM University	155

Dünya'da en çok yayın yapılan yapay zeka ile ilgili başlıklar aşağıdaki gibidir;

Tablo 4 Dünya'da En Çok Yayın Yapılan Yapay Zeka ile İlgili Başlıklar

Topic Cluster	Scholarly Output	Field-Weighted Citation Impact	Prominence percentile
Algorithms; Computer Vision; Models	224521	1,42	99,799
Semantics; Models; Recommender Systems	73511	1,29	98,06
Stroke; Gait; Rehabilitation	41767	0,82	96,12
Classification (Of Information); Learning Systems; Algorithms	33305	1,12	94,983

Decision Making; Fuzzy Sets; Models	22232	1,43	93,445
Models; Social Networking (Online); Algorithms	28285	1,23	92,776
Robots; Robotics; Manipulators	30775	0,9	92,107
Speech; Speech Recognition; Models	29752	1,47	91,906
Optimization; Algorithms; Evolutionary Algorithms	18678	1,73	91,304
Multi Agent Systems; Motion Planning; Robots	25178	0,99	91,104
Robots; Robotics; Human Robot Interaction	14264	1,39	84,749
Electroencephalography; Brain Computer Interface; Electrophysiology	11590	1,15	82,676
Vehicle Routing; Algorithms; Vehicles	6703	0,99	74,381
Magnetic Resonance Imaging; Image Segmentation; Medical Imaging	9527	1,34	73,645
Cytology; Image Segmentation; Medical Imaging	7431	1,3	72,575
Sensors; Accelerometers; Smartphones	8620	1,19	72,241
Human Engineering; Ergonomics; Automation	7855	1,02	68,963
Agriculture; Fruits; Agricultural Machinery	6862	1,31	67,023
Fuzzy Systems; Fuzzy Inference; Neural Networks	6529	1,39	61,605
Manufacture; Industry; Automation	4500	1,34	61,538
Reinforcement Learning; Robots; Artificial Intelligence	7377	1,05	61,472
Data Mining; Algorithms; Association Rules	5336	1,56	57,324
Surgery; Needles; Robotics	5970	0,96	57,057
Virtual Reality; Feedback; Haptic Interfaces	5845	0,87	54,314
Artificial Intelligence; Algorithms; Semantics	7320	0,81	49,967
Rough Set Theory; Algorithms; Formal Concept Analysis	3685	1,08	46,154
Clustering Algorithms; Data Mining; Cluster Analysis	4002	0,88	44,682
Character Recognition; Optical Character Recognition; Feature Extraction	5020	0,84	44,615
Railroads; Railroad Transportation; Rails	3570	0,69	41,739
Color; Art; Esthetics	3047	0,95	40
Systems Engineering; Design; Models	3847	0,73	39,599
Autonomous Underwater Vehicles; Underwater Acoustics; Remotely Operated Vehicles	3976	0,93	39,13
Neural Networks; Forecasting; Algorithms	3069	1,07	38,997
Algebra; Fuzzy; Semigroup	5048	0,85	36,522
Neural Networks; Algorithms; Models	3819	0,53	30,301
Artificial Intelligence; Algorithms; Computers	3892	0,59	28,696
Agents; Multi Agent Systems; Models	2361	0,96	28,161
Heart; Acoustic Waves; Cardiology	1686	1,01	25,686
Neural Networks; Self Organizing Maps; Algorithms	1063	1,31	14,247

Önem derecesine göre dünya çapındaki konu kümelerinin ilk %10'unun 2021-2022 yıllarında en çok atıf alan ilk 10 makale listeleri aşağıdaki gibidir,

Tablo 5 Algorithms; Computer Vision; Models

Title	Year	SNIP (publication year)	CiteScore (publication year)	SJR (publication year)	Citations	Field-Weighted Citation Impact	Institutions	Number of Institutions	Country/Region	All Science Journal Classification (ASJC) field name	Sustainable Development Goals (2022)	Topic name
OpenPose: Realtime Multi-Person 2D Pose Estimation Using Part Affinity Fields	2021	7,34	36,6	8,269	775	248,12	University of California at Berkeley Carnegie Mellon University Meta	3	United States	Artificial Intelligence Computational Theory and Mathematics Computer Vision and Pattern Recognition Software Applied Mathematics	-	Deep Learning, Motion Capture, Ethoprop
nnU-Net: a self-configuring method for deep learning-based biomedical image segmentation	2021	8,13	36,2	12,115	416	127,42	Heidelberg University Alphabet Inc. German Cancer Research Center	3	United Kingdom Germany	Biochemistry Biotechnology Cell Biology Molecular Biology	-	Object Detection, Deep Learning, IOU
Res2Net: A New Multi-Scale Backbone Architecture	2021	7,34	36,6	8,269	404	126,22	-	0	-	Artificial Intelligence Computational Theory and Mathematics Computer Vision and Pattern Recognition Software Applied Mathematics	-	Object Detection, Deep Learning, IOU
Deep High-Resolution Representation Learning for Visual Recognition	2021	7,34	36,6	8,269	374	118,91	Microsoft USA	1	China	Artificial Intelligence Computational Theory and Mathematics Computer Vision and Pattern Recognition Software Applied Mathematics	-	Object Detection, Deep Learning, IOU
Review of deep learning: concepts, CNN architectures, challenges, applications, future directions	2021	4,66	14,4	2,592	295	88,22	Manchester Metropolitan University University of Sumer University of Missouri University of Technology-	8	United Kingdom Iraq Spain United States Australia	Computer Networks and Communications Hardware and Architecture Information Systems Information	-	Object Detection, Deep Learning, IOU

							Iraq University of Jaén Queensland University of Technology Middle Technical University University of Information Technology and Communications			Systems and Management		
A hybrid deep transfer learning model with machine learning methods for face mask detection in the era of the COVID-19 pandemic	2021	1,79	7,8	0,996	259	93,23	Benha University Cairo University Asia University Taiwan University of California at Davis	4	Taiwan Egypt United States	Electrical and Electronic Engineering Instrumentation	SDG 3	Object Detection,Deep Learning,IOU
Classification of COVID-19 in chest X-ray images using DeTraC deep convolutional neural network	2021	1,73	7,8	1,211	251	60,69	Birmingham City University Assiut University	2	United Kingdom Egypt	Artificial Intelligence	SDG 3	Object Detection,Deep Learning,IOU
Deep learning approaches for COVID-19 detection based on chest X-ray images	2021	2,98	12,2	2,07	232	76,12	Sulaimani Polytechnic University Firat University	2	Iraq Turkey	Artificial Intelligence Computer Science Applications General Engineering	SDG 3	Object Detection,Deep Learning,IOU
Automatic detection of coronavirus disease (COVID-19) using X-ray images and deep convolutional neural networks	2021	1,03	4,8	0,707	223	60,48	Zonguldak Bülent Ecevit University	1	Turkey	Artificial Intelligence Computer Vision and Pattern Recognition	SDG 3	Object Detection,Deep Learning,IOU
AutoML: A survey of the state-of-the-art	2021	2,61	12	2,192	210	55,73	Hong Kong Baptist University	1	Hong Kong	Management Information Systems Artificial Intelligence Software Information Systems and Management	-	Object Detection,Deep Learning,IOU

Table 6 Semantics; Models; Recommender Systems

Title	Year	SNIP (publ icati on year)	CiteS core (publ icati on year)	SJR (publ icati on year)	Citat ions	Field- Weight ed Citation Impact	Institutions	Num ber of Instit utio ns	Country/ Region	All Science Journal Classification (ASJC) field name	Sustain able Develo pment Goals (2022)	Topic name
ABCDM: An Attention-based Bidirectional CNN-RNN Deep Model for sentiment analysis	2021	2,7	18,7	2,23 3	196	57,93	Shahrekord University Ngee Ann Polytechnic Nanyang Technological University Deakin University	4	Singapore Australia Iran	Computer Networks and Communications Hardware and Architecture Software	-	Sentiment Classification, Data Mining, Product Review
Comparative Toxicogenomics Database (CTD): Update 2021	2021	5,19	28	8,24 1	187	52,05	North Carolina State University	1	United States	Genetics	SDG 3	Biomedical, Curation, Medline
A Survey of the Usages of Deep Learning for Natural Language Processing	2021	3,31	20,8	4,22 2	156	43,29	University of Colorado Colorado Springs	1	United States	Artificial Intelligence Computer Networks and Communications Computer Science Applications Software	-	Embedding, Named Entity Recognition, Entailment
A Survey on Knowledge Graphs: Representation, Acquisition, and Applications	2022	-	-	-	110	127,45	Nanyang Technological University University of Illinois at Chicago Aalto University Monash University	4	Singapore Finland United States Australia	Artificial Intelligence Computer Networks and Communications Computer Science Applications Software	-	Embedding, Named Entity Recognition, Entailment
A Term Weighted Neural Language Model and Stacked Bidirectional LSTM Based Framework for Sarcasm Identification	2021	1,33	6,7	0,92 7	107	39,08	Izmir Katip Celebi University Celal Bayar University	2	Turkey	General Computer Science General Engineering General Materials Science	-	Sentiment Classification, Data Mining, Product Review
A Survey on Deep Learning for Named Entity Recognition	2022	-	-	-	104	100,14	Nanyang Technological University Wuhan University Inception Institute of Artificial Intelligence	3	United Arab Emirates China Singapore	Computational Theory and Mathematics Computer Science Applications Information Systems	-	Embedding, Named Entity Recognition, Entailment
CNN-RNN Based Intelligent Recommendation for Online Medical Pre-Diagnosis Support	2021	1,17	6,6	0,69 6	94	30,98	RIKEN Shiga University South China University of Technology	3	China Japan	Biotechnology Genetics Applied Mathematics	-	Embedding, Named Entity Recognition, Entailment
Knowledge graphs	2021	7,77	28	5,09	80	33,98	University of Rome La Sapienza University of Milan - Bicocca Rensselaer Polytechnic Institute Linköping University University of Southampton	15	Austria Chile United Kingdom Spain United	General Computer Science Theoretical Computer Science	-	Embedding, Named Entity Recognition, Entailment

								University of Stuttgart Elsevier École des mines de Saint-Étienne Vienna University of Economics and Business University of Bonn Paderborn University University of Oviedo University of Bari Universidad de Chile Institut Mines-Télécom		States Germany Italy France Netherlands Sweden			
A performance comparison of supervised machine learning models for Covid-19 tweets sentiment analysis	2021	1,37	5,6	0,852	79	19,41	Yeungnam University Florida International University Khwaja Fareed University of Engineering & Information Technology Islamia University	4	South Korea United States Pakistan	Multidisciplinary	-	Sentiment Classification, Data Mining, Product Review	
ASRNN: A recurrent neural network with an attention model for sequence labeling	2021	2,61	12	2,192	79	20,97	Qingdao University Western Norway University of Applied Sciences Sejong University SINTEF Alibaba Group Holding Ltd.	5	Norway China South Korea	Management Information Systems Artificial Intelligence Software Information Systems and Management	-	Treebank, Semantic Roles, Computational Linguistics	

Tablo 7 Stroke; Gait; Rehabilitation

Title	Year	SNIP (publication year)	CiteScore (publication year)	SJR (publication year)	Citations	Field-Weighted Citation Impact	Institutions	Number of Institutions	Country/Region	All Science Journal Classification (ASJC) field name	Sustainable Development Goals (2022)	Topic name
A wearable biosensing system with in-sensor adaptive machine learning for hand gesture recognition	2021	5,92	41,3	8,302	89	31,3	IBM University of California at Berkeley University of Bologna Swiss Federal Institute of Technology Zurich	4	United States Switzerland Italy	Electrical and Electronic Engineering Electronic, Optical and Magnetic Materials Instrumentation	-	Electromyography, Artificial Limbs, Muscle
The Effects of Virtual Reality, Augmented Reality, and Mixed Reality as Training Enhancement Methods: A Meta-Analysis	2021	1,67	7	0,905	67	23,18	MITRE Corporation University of Central Florida	2	United States	Behavioral Neuroscience Applied Psychology Human Factors and Ergonomics	SDG 4	Telerehabilitation, Virtual Reality, Upper Extremity
Neuropsychological and neurophysiological correlates of fatigue in post-acute patients with	2021	1,08	5,2	0,884	61	24,43	IRCCS Fondazione Santa Lucia - Roma University of Messina University of Salzburg Hospital Nacional de Parapléjicos	4	Austria Spain Italy	Neurology (clinical) Neurology	-	Transcranial Magnetic Stimulation, Motor Evoked Potentials, Motor Cortex

neurological manifestations of COVID-19: Insights into a challenging symptom												
Detection algorithm of safety helmet wearing based on deep learning	2021	0,83	3,8	0,51 5	49	16,76	Wuhan University of Science and Technology	1	China	Computational Theory and Mathematics Computer Networks and Communications Computer Science Applications Software Theoretical Computer Science	-	Electromyography,Artificial Limbs,Muscle
Disentangling EEG responses to TMS due to cortical and peripheral activations	2021	1,93	12,6	2,35 2	46	17,93	IRCCS Fondazione Santa Lucia - Roma Imperial College London University College London Universita Campus Bio-Medico di Roma	4	United Kingdom Italy	Biophysics Neurology (clinical) General Neuroscience	-	Transcranial Magnetic Stimulation,Electroencephalography,Motor Cortex
Low cost exoskeleton manipulator using bidirectional triboelectric sensors enhanced multiple degree of freedom sensory system	2021	3,34	23,2	4,84 6	40	9,52	Soochow University Agency for Science, Technology and Research National University of Singapore	3	China Singapore	General Biochemistry,Genetics and Molecular Biology General Chemistry General Physics and Astronomy	SDG 9	Exoskeletons,Robotics,Foot Orthoses
Sensor network oriented human motion capture via wearable intelligent system	2022	-	-	-	38	56,1	Dalian University of Technology Zhengzhoug University of Light Industry East China Jiaotong University	3	China	Artificial Intelligence Human-Computer Interaction Software Theoretical Computer Science	-	Inertial Sensors,Biomechanics,Motion Capture
Deep Learning for EMG-based Human-Machine Interaction: A Review	2021	2,65	13	2,13 2	36	10,38	University of Chinese Academy of Sciences CAS - Shenyang Institute of Automation Chinese Academy of Sciences	3	China	Artificial Intelligence Information Systems Control and Systems Engineering	-	Electromyography,Artificial Limbs,Muscle
Dynamic Gesture Recognition Using Surface EMG Signals Based on Multi-Stream Residual Network	2021	1,17	5,4	0,92 5	34	12,05	Wuhan University of Science and Technology China Three Gorges University	2	China	Biotechnology Bioengineering Biomedical Engineering Histology	-	Electromyography,Artificial Limbs,Muscle
Fully Wearable Actuated Soft Exoskeleton for Grasping Assistance in Everyday Activities	2021	2,79	16,3	3,02 7	32	9,21	Swiss Federal Institute of Technology Zurich Kyushu University	2	Japan Switzerland	Biophysics Artificial Intelligence Control and Systems Engineering	SDG 3	Exoskeletons,Upper Extremity,Stroke Rehabilitation

Table 8 Classification (Of Information); Learning Systems; Algorithms

Title	Year	SNIP (publica- tion year)	CiteS core (publ- ication year)	SJR (publ- ication year)	Cita- tions	Field- Weight- ed Cita- tion Impact	Institutions	Num- ber of Insti- tu- tions	Country/ Region	All Science Journal Classification (ASJC) field name	Sustain- able Develo- pment Goals (2022)	Topic name
A Survey on Multi-Task Learning	2021	3,62	13,1	2,43 1	129	42,9	Hong Kong University of Science and Technology	1	Hong Kong	Computational Theory and Mathematics Computer Science Applications Information Systems	SDG 4	Transfer Of Learning, Multiple Tasks, Life Long Learning
Bankruptcy prediction for SMEs using transactional data and two-stage multiobjective feature selection	2021	2,66	11,3	1,97 3	93	34,03	University of Electronic Science and Technology of China Southwestern University of Finance and Economics	2	China	Arts and Humanities (miscellaneous) Management Information Systems Information Systems Information Systems and Management Developmental and Educational Psychology	-	Bankruptcy Prediction, Credit Scoring, Prediction
Nexus between financial innovation and bankruptcy: Evidence from information, communication and technology (ict) sector	2021	0,56	1,8	0,29 8	80	29,24	Jiangsu University Taylor's University Malaysia City University of Macau Chiang Mai University Fuzhou University of International Studies and Trade University Utara Malaysia Islamia University	7	China Pakistan Thailand Malaysia Macao	Economics and Econometrics	-	Bankruptcy Prediction, Credit Scoring, Prediction
Affine Transformation-Enhanced Multifactorial Optimization for Heterogeneous Problems	2022	-	-	-	79	20,5	China University of Petroleum (East China) Chongqing University City University of Hong Kong	3	China Hong Kong	Computer Science Applications Human-Computer Interaction Information Systems Software Control and Systems Engineering Electrical and Electronic Engineering	-	Transfer Of Learning, Multiple Tasks, Life Long Learning
The matthews correlation coefficient (Mcc) is more reliable than balanced accuracy, bookmaker informedness, and markedness in two-class confusion matrix evaluation	2021	0,95	4,1	0,70 1	79	26,68	Fondazione Bruno Kessler University of Duisburg-Essen	2	Germany Italy Canada	Biochemistry Genetics Molecular Biology Computational Theory and Mathematics Computer Science Applications Computational Mathematics	-	Imbalanced Data, Cost-Sensitive Learning, Data Classification

A comparative analysis of gradient boosting algorithms	2021	3,57	14,9	2,18	76	63,55	Peter Pazmany Catholic University Université de Bordeaux Universidad Autónoma de Madrid	3	Spain France Hungary	Language and Linguistics Artificial Intelligence Linguistics and Language	-	Classifier Ensemble,Adaboost, Transfer Of Learning
NeuroKit2: A Python toolbox for neurophysiological signal processing	2021	3,57	10,7	2,87 4	64	29,27	University of Montreal Nanyang Technological University Imperial College London University of Applied Sciences Mittelhessen Radboud University Nijmegen	5	Singapore Germany Netherlands Canada	Arts and Humanities (miscellaneous) General Psychology Psychology (miscellaneous) Developmental and Educational Psychology Experimental and Cognitive Psychology	-	Python,Bohrium,Tariffs
Multiobjective Particle Swarm Optimization for Feature Selection with Fuzzy Cost	2021	3,67	22	4,50 6	58	16,47	China University of Mining and Technology	1	China	Computer Science Applications Human-Computer Interaction Information Systems Software Control and Systems Engineering Electrical and Electronic Engineering	-	Feature Subset Selection,Genetic Algorithm,High-Dimensional Data
Combining unsupervised and supervised learning in credit card fraud detection	2021	2,4	12,1	2,29	52	12,39	Université libre de Bruxelles	1	Belgium France	Artificial Intelligence Computer Science Applications Software Information Systems and Management Control and Systems Engineering Theoretical Computer Science	-	Credit Card Fraud,Fraud Detection,Crime
Dynamic Salp swarm algorithm for feature selection	2021	2,98	12,2	2,07	52	16,73	University of Malaya Torrens University Australia Xiamen University	3	Australia Malaysia	Artificial Intelligence Computer Science Applications General Engineering	-	Feature Subset Selection,Genetic Algorithm,High-Dimensional Data

Table 9 Decision Making; Fuzzy Sets; Models

Title	Year	SNIP (publicati on year)	CiteS core (publ icati on year)	SJR (publ icati on year)	Citations	Field- Weight ed Citation Impact	Institutions	Num ber of Instit utio ns	Country/ Region	All Science Journal Classification (ASJC) field name	Sustainable Developme nt Goals (2022)	Topic name
Pythagorean fuzzy interactive Hamacher power aggregation operators for assessment of express service quality with entropy weight	2021	1,38	6,3	0,87 9	107	49,59	Thapar University Liaoning Technical University	2	India China	Software Geometry and Topology Theoretical Computer Science	-	Aggregation Operators,Pythagorean,Fuzzy Set
Aleatoric and epistemic uncertainty in machine learning: an introduction to concepts and methods	2021	2,35	7,2	1,64	93	23,73	Paderborn University Ghent University	2	Belgium Germany	Artificial Intelligence Software	-	Imprecise Probabilities,Predictive Inference,Set
CEQD: A Complex Mass Function to Predict Interference Effects	2021	3,67	22	4,50 6	87	26,05	Chongqing University	1	China	Computer Science Applications Human-Computer Interaction Information Systems Software Control and Systems Engineering Electrical and Electronic Engineering	-	Data Mining,Uncertainty Measure,Dempster-Shafer Theory
A new hybrid multi-criteria decision-making approach for location selection of sustainable offshore wind energy stations: A case study	2021	2,44	15,8	1,92 1	86	17,52	Zagazig University University of New South Wales	2	Egypt Australia	Strategy and Management Renewable Energy, Sustainability and the Environment Industrial and Manufacturing Engineering General Environmental Science	SDG 7 SDG 8 SDG 14	Aggregation Operators,Pythagorean,Fuzzy Set
A Distance Measure for Intuitionistic Fuzzy Sets and Its Application to Pattern Classification Problems	2021	3	18,2	3,44 8	84	19,56	Southwest University	1	China	Computer Science Applications Human-Computer Interaction Software Control and Systems Engineering Electrical and Electronic Engineering	-	Belief Functions,Evidential Reasoning,Evidence Theory
Consensus reaching for MAGDM with multi-granular hesitant fuzzy linguistic term sets: a minimum adjustment-based approach	2021	1,73	6,1	1,16 5	84	19,06	Dalian University of Technology	1	China	General Decision Sciences Management Science and Operations Research	-	Aggregation Operators,Pythagorean,Fuzzy Set
Big Data Driven Marine Environment	2021	3,14	21,9	4,08	77	26,97	Jacksonville University Tianjin	3	China United States	Artificial Intelligence Computational Theory and Mathematics	-	Fuzzy Time Series,Taiwan Stock

Information Forecasting: A Time Series Prediction Network							University Embry-Riddle Aeronautical University			Control and Systems Engineering Applied Mathematics		Exchange,Mode I-Based
Large-scale group decision-making with non-cooperative behaviors and heterogeneous preferences: An application in financial inclusion	2021	2,81	10,5	2,35 4	74	24,49	University of Jaén University of Electronic Science and Technology of China University of Córdoba Southwestern University of Finance and Economics Sichuan University University of Granada King Abdulaziz University	7	China Spain Saudi Arabia	General Computer Science Information Systems and Management Management Science and Operations Research Modeling and Simulation	SDG 1 SDG 8 SDG 10	Large-Scale,Preference Relation,Aggregation Operators
A variable weight-based hybrid approach for multi-attribute group decision making under interval-valued intuitionistic fuzzy sets	2021	1,91	13,6	1,69 3	71	21,36	Yunnan University of Finance and Economics Shenzhen University Hong Kong Polytechnic University	3	China Hong Kong	Artificial Intelligence Human-Computer Interaction Software Theoretical Computer Science	-	Aggregation Operators,Pythagorean,Fuzzy Set
Algorithm for multiple attribute decision-making with interactive archimedean norm operations under pythagorean fuzzy uncertainty	2021	0,92	3,4	0,49 2	70	30,04	Thapar University Liaoning Technical University	2	India China	General Computer Science Computational Mathematics	-	Aggregation Operators,Pythagorean,Fuzzy Set

Table 10 Models; Social Networking (Online); Algorithms

Title	Year	SNIP (public ation year)	CiteSco re (public ation year)	SJR (publi cation year)	Citations	Field - Weig hted Citat ion Impa ct	Institutions	Number of Institutio ns	Country/ Region	All Science Journal Classification (ASJC) field name	Sustainable Developme nt Goals (2022)	Topic name
A Comprehensive Survey on Graph Neural Networks	2021	3,31	20,8	4,222	908	248, 82	University of Illinois at Chicago Monash University University of Technology Sydney	3	United States Australia	Artificial Intelligence Computer Networks and Communications Computer Science Applications Software	-	Graph Embedding, Graph, Vector Spaces
Deep Learning on Graphs: A Survey	2022	-	-	-	130	115, 68	Tsinghua University	1	China	Computational Theory and Mathematics Computer Science Applications Information Systems	-	Graph Embedding, Graph, Vector Spaces
The echo chamber effect on social media	2021	3,06	18,1	4,184	113	27,5 1	University of Rome La Sapienza Institute for Scientific Interchange Foundation University of Brescia Ca' Foscari University of Venice	4	Italy	Multidisciplinary	SDG 16	Rumor, Social Media, Disinformation
Shifting attention to accuracy can reduce misinformation online	2021	11,34	70,2	17,89 7	108	26,5 3	University of Regina University of Exeter Massachusetts Institute of Technology Centro de Investigación y Docencia Económicas	4	United Kingdom Mexico United States Canada	Multidisciplinary	-	Rumor, Social Media, Disinformation
Does Media Literacy Help Identification of Fake News? Information Literacy Helps, but Other Literacies Don't	2021	1,66	4,7	0,84	95	68,3 2	University of South Carolina Boston College	2	United States	Social Psychology General Social Sciences Education Sociology and Political Science Cultural Studies	-	Rumor, Social Media, Disinformation

An ensemble machine learning approach through effective feature extraction to classify fake news	2021	2,7	18,7	2,233	88	26,28	University of New Brunswick Charles Darwin University Jazan University Vellore Institute of Technology Air University, Islamabad	5	India Saudi Arabia Australia Pakistan Canada	Computer Networks and Communications Hardware and Architecture Software	-	Rumor,Social Media,Disinformation
Fake news detection: A hybrid CNN-RNN based deep learning approach	2021	-	-	-	88	28,61	Harokopio University National University of Ireland, Galway International Islamic University Islamabad	3	Ireland Pakistan Greece	Management Information Systems Artificial Intelligence Information Systems Information Systems and Management Industrial and Manufacturing Engineering Library and Information Sciences	-	Rumor,Social Media,Disinformation
Multiple features based approach for automatic fake news detection on social networks using deep learning	2021	2,4	12,4	1,959	75	20,07	Macquarie University National Institute of Technology Kurukshetra Asia University Taiwan	3	Taiwan India Australia	Software	-	Rumor,Social Media,Disinformation
An exploratory study of COVID-19 misinformation on Twitter	2021	1,72	6,7	0,929	70	29,94	Leiden University University of Agder University of Duisburg-Essen	3	Norway Germany Netherlands	Computer Networks and Communications Information Systems Communication	-	Rumor,Social Media,Disinformation
"Fake News" Is Not Simply False Information: A Concept Explication and Taxonomy of Online Content	2021	1,66	4,7	0,84	70	45,81	Pennsylvania State University	1	United States	Social Psychology General Social Sciences Education Sociology and Political Science Cultural Studies	SDG 3	Rumor,Social Media,Disinformation

Table 11 Robots; Robotics; Manipulators

Title	Year	SNIP (publica- tion year)	CiteS core (publ- icati- on year)	SJR (publ- icati- on year)	Citations	Field- Weight- ed Cita- tion Impact	Institutions	Number of Institu- tions	Country/ Region	All Science Journal Classification (ASJC) field name	Sustaina- ble Develo- pment Goals (2022)	Topic name
Self-powered soft robot in the Mariana Trench	2021	11,34	70,2	17,897	126	30,95	National University of Defense Technology Zhejiang University Shanghai Ocean University Dalian Maritime University Chinese Academy of Sciences	5	China	Multidisciplinary	-	Pneumatic Actuators,Grippers, Robot
How to train your robot with deep reinforcement learning: lessons we have learned	2021	3,18	14,8	3,403	43	14,8	University of California at Berkeley Stanford University Alphabet Inc.	3	United States	Artificial Intelligence Software Electrical and Electronic Engineering Mechanical Engineering Applied Mathematics Modeling and Simulation	-	Robot Learning,Imitation, Reinforcement Learning
A Data-Driven Cyclic-Motion Generation Scheme for Kinematic Control of Redundant Manipulators	2021	2,18	11,6	2,191	41	9,34	Guangdong Ocean University Lanzhou University Chinese Academy of Sciences	3	China	Control and Systems Engineering Electrical and Electronic Engineering	-	Manipulator,Redundant Manipulators,Inverse Kinematics
Soft magnetic skin for super-resolution tactile sensing with force self-decoupling	2021	5,71	32,6	6,569	40	13,55	The University of Hong Kong Carnegie Mellon University Southern University of Science and Technology City University of Hong Kong	4	China Hong Kong United States	Artificial Intelligence Computer Science Applications Mechanical Engineering Control and Optimization	-	Tactile Sensor,Sensing,Touch
Digital twins for collaborative robots: A case study in human-robot interaction	2021	3,37	16	2,873	39	15,15	Daimler AG University of Stuttgart	2	Germany Denmark	Computer Science Applications Software Control and Systems Engineering Industrial and Manufacturing Engineering General Mathematics	SDG 9	Elastic,Collision Detection,Human-Robot Interaction

A soft manipulator for efficient delicate grasping in shallow water: Modeling, control, and real-world experiments	2021	3,18	14,8	3,40 3	39	13,08	Beihang University Chinese Academy of Sciences	2	China	Artificial Intelligence Software Electrical and Electronic Engineering Mechanical Engineering Applied Mathematics Modeling and Simulation	-	Pneumatic Actuators, Grippers, Robot
An Incremental Learning Framework for Human-Like Redundancy Optimization of Anthropomorphic Manipulators	2022	-	-	-	38	46,99	Technical University of Munich Polytechnic University of Milan	2	Germany Italy	Computer Science Applications Information Systems Control and Systems Engineering Electrical and Electronic Engineering	-	Robot Learning, Imitation, Reinforcement Learning
3D Printing Materials for Soft Robotics	2021	3,9	47,7	8,66 3	38	10,86	Italian Institute of Technology	1	Israel Italy	Mechanical Engineering Mechanics of Materials General Materials Science	SDG 9	Pneumatic Actuators, Grippers, Robot
Electronics-free pneumatic circuits for controlling soft-legged robots	2021	5,71	32,6	6,56 9	35	11,86	University of California at San Diego	1	United States	Artificial Intelligence Computer Science Applications Mechanical Engineering Control and Optimization	-	Pneumatic Actuators, Grippers, Robot
Collision-free human-robot collaboration based on context awareness	2021	3,37	16	2,87 3	35	13,6	KTH Royal Institute of Technology	1	Sweden	Computer Science Applications Software Control and Systems Engineering Industrial and Manufacturing Engineering General Mathematics	SDG 9	Elastic, Collision Detection, Human-Robot Interaction

Tablo 12 Speech; Speech Recognition; Models

Title	Year	SNIP (publication year)	CiteS core (publication year)	SJR (public year)	Citations	Field-Weighted Citation Impact	Institutions	Number of Institutions	Country/Region	All Science Journal Classification (ASJC) field name	Sustainable Development Goals (2022)	Topic name
1D convolutional neural networks and applications: A survey	2021	3,23	15,1	2,768	269	91,24	Izmir Ekonomi University Iowa State University Qatar University University of Michigan, Ann Arbor Linnaeus University Tampere University	6	Qatar Finland United States Turkey Sweden	Computer Science Applications Signal Processing Aerospace Engineering Civil and Structural Engineering Control and Systems Engineering Mechanical Engineering	-	Speaker Adaptation, Acoustic Model, Deep Neural Network

Forecasting and Anomaly Detection approaches using LSTM and LSTM Autoencoder techniques with the applications in supply chain management	2021	5,42	28,8	4,584	64	20,47	École nationale supérieure des arts et industries textiles	1	France Viet Nam	Management Information Systems Marketing Artificial Intelligence Computer Networks and Communications Information Systems Information Systems and Management Library and Information Sciences	-	Deep Learning, Handwriting Recognition, Long Short-Term Memory
Temporal Fusion Transformers for interpretable multi-horizon time series forecasting	2021	2,79	7,9	1,99	50	16,5	University of Oxford Alphabet Inc.	2	United Kingdom United States	Business and International Management	-	Deep Learning, Handwriting Recognition, Long Short-Term Memory
Machine learning for pore-water pressure time-series prediction: Application of recurrent neural networks	2021	2,55	11,8	1,78	47	17,64	Beihang University Shanghai Jiao Tong University Hong Kong University of Science and Technology	3	China Hong Kong	General Earth and Planetary Sciences	-	Deep Learning, Handwriting Recognition, Long Short-Term Memory
Fuzzy Detection System for Rumors through Explainable Adaptive Learning	2021	3,14	21,9	4,08	45	15,76	Manchester Metropolitan University Macquarie University University of Electronic Science and Technology of China Waseda University Thapar University National University of Sciences and Technology Pakistan Chongqing Technology and Business University King Abdulaziz University University of Petroleum and Energy Studies Asia University Taiwan	10	Taiwan India United Kingdom China Japan Saudi Arabia Australia Pakistan	Artificial Intelligence Computational Theory and Mathematics Control and Systems Engineering Applied Mathematics	-	Machine Translation, Question Answering, Reading Comprehension
Deep learning-based late fusion of multimodal information for emotion	2021	1,05	5,3	0,716	45	13,76	Jeonbuk National University	1	South Korea	Computer Networks and Communications Hardware and Architecture Software Media Technology	-	Emotion Recognition, Emotional Speech, Emotion

classification of music video												
Ultrasonic guided wave based structural damage detection and localization using model assisted convolutional and recurrent neural networks	2021	2,98	12,2	2,07	44	14,44	Indian Institute of Science Bangalore	1	India	Artificial Intelligence Computer Science Applications General Engineering	-	Event Detection, Polyphonic, Acoustics
MLT-DNet: Speech emotion recognition using 1D dilated CNN based on multi-learning trick approach	2021	2,98	12,2	2,07	44	13,78	Sejong University	1	South Korea	Artificial Intelligence Computer Science Applications General Engineering	-	Emotion Recognition, Emotional Speech, Emotion
Att-Net: Enhanced emotion recognition system using lightweight self-attention module	2021	2,4	12,4	1,959	42	11,24	Sejong University	1	South Korea	Software	-	Emotion Recognition, Emotional Speech, Emotion
Anomaly Detection Based on Convolutional Recurrent Autoencoder for IoT Time Series	2022	-	-	-	40	35,4	Northeastern State University Changsha University of Science and Technology Nanjing University of Information Science & Technology	3	China United States	Computer Science Applications Human-Computer Interaction Software Control and Systems Engineering Electrical and Electronic Engineering	-	Deep Learning, Handwriting Recognition, Long Short-Term Memory

Table 13 Optimization; Algorithms; Evolutionary Algorithms

Title	Year	SNIP (publication year)	CiteScore (publication year)	SJR (publication year)	Citations	Field-Weighted Citation Impact	Institutions	Number of Institutions	Country/Region	All Science Journal Classification (ASJC) field name	Sustainable Development Goals (2022)	Topic name
The Arithmetic Optimization Algorithm	2021	2,04	10,3	2,179	540	177,73	Torrens University Australia Wuhan University of Technology Yonsei University Zagazig University New York University University of Technology Sydney NYU Abu Dhabi	8	United Arab Emirates South Korea China Egypt United States	Computer Science Applications Computational Mechanics Mechanical Engineering Mechanics of Materials General Physics and Astronomy	-	Metaheuristics, Fireflies, Chiroptera

Aquila Optimizer: A novel meta-heuristic optimization algorithm	2021	2,21	9,7	1,775	379	160,67	Academy of Scientific Research and Technology Al-Fayoum University Zagazig University Wuhan University University of Technology Sydney Damietta University Amman Arab University	7	China Egypt Jordan Australia	General Computer Science General Engineering	-	Metaheuristics,Fireflies,Chiroptera
A review on genetic algorithm: past, present, and future	2021	1,05	5,3	0,716	270	82,59	National Institute of Technology Hamirpur	1	India	Computer Networks and Communications Hardware and Architecture Software Media Technology	-	Decomposition,Evolutionary Multiobjective Optimization,Pareto Front
Hunger games search: Visions, conception, implementation, deep analysis, perspectives, and towards performance shifts	2021	2,98	12,2	2,07	233	76,44	University of Tehran Wenzhou University National University of Singapore University of Technology Sydney	4	China Singapore Australia Iran	Artificial Intelligence Computer Science Applications General Engineering	-	Metaheuristics,Fireflies,Chiroptera
RUN beyond the metaphor: An efficient optimization algorithm based on Runge Kutta method	2021	2,98	12,2	2,07	177	58,07	University of Tehran Wenzhou University National University of Singapore University of Technology Sydney North Dakota State University	5	China Singapore United States Australia Iran	Artificial Intelligence Computer Science Applications General Engineering	-	Metaheuristics,Fireflies,Chiroptera
Archimedes optimization algorithm: a new metaheuristic algorithm for solving optimization problems	2021	1,73	7,8	1,211	168	40,79	Misr University for Science and Technology University of Electronic Science and Technology of China Minia University Helwan University	4	China Egypt	Artificial Intelligence	-	Metaheuristics,Fireflies,Chiroptera
An improved grey wolf optimizer for solving engineering problems	2021	2,98	12,2	2,07	168	55,12	Islamic Azad University Torrens University Australia Yonsei University	3	South Korea Australia Iran	Artificial Intelligence Computer Science Applications General Engineering	SDG 15	Metaheuristics,Fireflies,Chiroptera
Chaotic random spare ant colony optimization for multi-threshold image segmentation of 2D Kapur entropy	2021	2,61	12	2,192	158	41,93	University of Tehran Wenzhou University National University of Singapore Sejong University Changchun Normal University Duy Tan University	6	South Korea China Singapore Iran Viet Nam	Management Information Systems Artificial Intelligence Software Information Systems and Management	-	Metaheuristics,Fireflies,Chiroptera

Orthogonal learning covariance matrix for defects of grey wolf optimizer: Insights, balance, diversity, and feature selection	2021	2,61	12	2,19 2	154	40,87	Nanchang Hangkong University University of Tehran Wenzhou University National University of Singapore Wenzhou Medical University Duy Tan University	6	China Singapore Iran Viet Nam	Management Information Systems Artificial Intelligence Software Information Systems and Management	-	Metaheuristics,Fireflies,Chiroptera
Differential evolution algorithm with wavelet basis function and optimal mutation strategy for complex optimization problem	2021	2,4	12,4	1,95 9	136	35,05	Southwest Jiaotong University Civil Aviation University of China Chongqing University Shandong Technology and Business University	4	China	Software	-	Evolutionary Algorithm,Cooperative Coevolution,Differential Evolution

Tablo 14 Multi Agent Systems; Motion Planning; Robots

Title	Year	SNIP (publica tion year)	CiteScore (publicati on year)	SJR (publ icati on year)	Citations	Field-Weight ed Citatio n Impact	Institutions	Num ber of Instit utio ns	Country/Regi on	All Science Journal Classification (ASJC) field name	Sustain able Develo pment Goals (2022)	Topic name
Event-Triggered Fuzzy Bipartite Tracking Control for Network Systems Based on Distributed Reduced-Order Observers	2021	3,14	21,9	4,08	160	47,98	Bohai University Texas A&M University Texas A&M University at Qatar	3	Qatar China	Artificial Intelligence Computational Theory and Mathematics Control and Systems Engineering Applied Mathematics	-	Consensus Problem,Formation Control,Topology
Containment Control of Semi-Markovian Multiagent Systems with Switching Topologies	2021	3	18,2	3,44 8	119	23,41	Bohai University Texas A&M University Hohai University Texas A&M University at Qatar	4	Qatar China	Computer Science Applications Human-Computer Interaction Software Control and Systems Engineering Electrical and Electronic Engineering	-	Consensus Problem,Formation Control,Topology
Event-Triggered Control for Multiagent Systems with Sensor Faults and Input Saturation	2021	3	18,2	3,44 8	119	21,63	Bohai University Guangdong University of Technology	2	China	Computer Science Applications Human-Computer Interaction Software Control and Systems Engineering Electrical and Electronic Engineering	-	Consensus Problem,Formation Control,Topology
Enhancing Learning Efficiency of Brain	2021	3	18,2	3,44 8	108	29,64	Northeastern University China	3	China	Computer Science Applications	-	Columbidae,Storms,Optimi

Storm Optimization via Orthogonal Learning Design							Southern University of Science and Technology Shaanxi Normal University			Human-Computer Interaction Software Control and Systems Engineering Electrical and Electronic Engineering		zation Algorithm
Observer-Based Event-Triggered Fuzzy Adaptive Bipartite Containment Control of Multiagent Systems with Input Quantization	2021	3,14	21,9	4,08	105	25,92	Bohai University Universidad Autonoma de Nuevo Leon Xidian University Guangdong University of Technology St. Petersburg National Research University of Information Technologies, Mechanics and Optics (ITMO)	5	China Mexico Russia n Federation	Artificial Intelligence Computational Theory and Mathematics Control and Systems Engineering Applied Mathematics	-	Consensus Problem,Formation Control,Topology
Recursive filtering of networked nonlinear systems: a survey	2021	0,72	4,2	0,74 1	100	35,02	Anhui Polytechnic University University of Shanghai for Science and Technology Beijing Institute of Technology	3	China	Computer Science Applications Control and Systems Engineering Theoretical Computer Science	-	Distributed Estimation,M atrix Inequality,Kal man Filter
Human-in-the-Loop Consensus Control for Nonlinear Multi-Agent Systems with Actuator Faults	2022	-	-	-	82	79,88	Guangdong University of Technology	1	China	Artificial Intelligence Information Systems Control and Systems Engineering	-	Consensus Problem,Formation Control,Topology
Design of Sliding-Mode-Based Control for Nonlinear Systems with Mixed-Delays and Packet Losses under Uncertain Missing Probability	2021	3	18,2	3,44 8	75	10,08	Anhui Polytechnic University Harbin University of Science and Technology	2	China	Computer Science Applications Human-Computer Interaction Software Control and Systems Engineering Electrical and Electronic Engineering	-	Distributed Estimation,M atrix Inequality,Kal man Filter
A Clustering-Based Coverage Path Planning Method for Autonomous Heterogeneous UAVs	2021	2,93	13,7	2,11 1	72	25,71	Northwestern Polytechnical University Xian Xi'an University of Technology	2	China	Computer Science Applications Automotive Engineering Mechanical Engineering	-	Swarm,M ission Planning,Unm anned Aerial Vehicle (UAV)
Distributed non-fragile set-membership filtering for nonlinear systems under fading channels and bias injection attacks	2021	0,72	4,2	0,74 1	69	24,16	Nanjing University of Science and Technology	1	China	Computer Science Applications Control and Systems Engineering Theoretical Computer Science	-	Distributed Estimation,M atrix Inequality,Kal man Filter

7 Yapay Zeka Alanında Patent

2021 ve 2022 yıllarında, dünyada yapay zeka alanında alınan patentler aşağıdaki gibidir;
(Atıf Sayısına Göre İlk 20)

Tablo 15 2021 ve 2022 Yıllarında, Dünyada Yapay Zeka Alanında Alınan Patentler

Title	Inventors	Applicants/ Owners	Publication year of patents	Patent office	Cited Scholarly Outputs	Abstract
Methods and systems of prioritizing treatments, vaccination, testing and/or activities while protecting the privacy of individuals	Ehrlich Gal Fenster Maier	Ehrlich Gal Fenster Maier	2021	United States Patent and Trademark Office	24	http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=11107588
Image white balancing	Cohen Scott Afifi Mahmoud Brown Michael Price Brian	York University Adobe Inc.	2021	United States Patent and Trademark Office	20	http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=11044450
Distributable event prediction and machine learning recognition system	Silva Jorge Manuel Gomes Da Chen Xu Wujek Brett Alan	Sas Institute Inc.	2021	United States Patent and Trademark Office	20	http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=10956825
Distributable event prediction and machine learning recognition system	Chen Xu Da Silva Jorge Manuel Gomes Wujek Brett Alan	Sas Institute Inc	2021	United States Patent and Trademark Office	18	http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=11151463
FINE-GRAINED VISUAL RECOGNITION IN MOBILE AUGMENTED REALITY	Tao, Shu Zhou, Bing Guven, Sinem	Ibm United Kingdom Limited International Business Machines Corporation Ibm (china) Investment Company Limited	2021	World Intellectual Property Organization	16	http://v3.espacenet.com/textdoc?DB=EPODOC&IDX=WO2021137111&F=0
Fine-grained visual recognition in mobile augmented reality	Tao Shu Guven Kaya	International Business	2021	United States Patent	16	http://patft.uspto.gov/netacgi/nph-

	Sinem Zhou Bing	Machines Corporation		and Trademark Office		Parser?patentnumber=11023730
Prediction of latent infection in plant products	Vild Cody Braden Savannah Kahlscheuer Matthew Perez Louis	Apeel Technology, Inc.	2021	United States Patent and Trademark Office	16	http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=11170872
PLANNING IN MOBILE ROBOTS	Hawasly, Majd Pulver, Henry Carozza, Ludovico Ramamoorthy, Subramanian Eiras, Francisco	Five Ai Limited	2021	World Intellectual Property Organization	15	http://v3.espacenet.com/textdoc?DB=EPODOC&IDX=WO2021152047&F=0
System and Method for Generating Image Landmarks	Sun Bin Fu Yun	Northeastern University	2021	United States Patent and Trademark Office	15	http://appft.uspto.gov/netacgi/nph-Parser?TERM1=20210158023&Sect1=PTO1&Sect2=HTOFF&d=PG01&p=1&u=%2Fnetacgi%2FTO%2Fsrchnum.html&r=0&f=S&l=50
RAPID, ACCURATE AND MACHINE-AGNOSTIC SEGMENTATION AND QUANTIFICATION METHOD AND DEVICE FOR CORONAVIRUS CT-BASED DIAGNOSIS	Gao, Xin Li, Zhongxiao Zhou, Longxi	King Abdullah University Of Science And Technology	2021	World Intellectual Property Organization	14	http://v3.espacenet.com/textdoc?DB=EPODOC&IDX=WO2021209887&F=0
DE-CENTRALISED LEARNING FOR RE-IDENTIFICATION	Gong, Shaogang Wu, Guile	Vision Semantics Limited	2021	World Intellectual Property Organization	14	http://v3.espacenet.com/textdoc?DB=EPODOC&IDX=WO2021152329&F=0
De-centralised learning for re-identification	Guile Wu Shaogong Gong	Vision Semantics Ltd	2021	UK Intellectual Property Office	14	http://v3.espacenet.com/textdoc?DB=EPODOC&IDX=GB2591496&F=0
TECHNIKEN ZUR GRUPPIERUNG VON MEHRFACHANSICHTSBILDERN MITTELS BINÄRKOMPRESSIONMULTI-VIEW IMAGE CLUSTERING TECHNIQUES USING BINARY COMPRESSIONTECHNIQUES DE REGROUPEMENT D'IMAGES	Shen, Heng Tao Zhang, Zheng Xu, Yong Shao, Ling Zhu, Fan Liu, Li Qin, Jie Shen, Fumin	Inception Institute Of Artificial Intelligence, Ltd.	2021	European Patent Office	13	http://v3.espacenet.com/textdoc?DB=EPODOC&IDX=EP3847580&F=0

MULTI-VUES UTILISANT UNE COMPRESSION BINAIRE						
In the artificial intelligence system for feedback control of the shaped laminate, and medium	-	Nantronics Imaging, inc.	2021	Japan Patent Office	13	http://v3.espacenet.com/textdoc?DB=EPODOC&IDX=JP2021517525&F=0
Multi-view image clustering techniques using binary compression	Xu Yong Liu Li Shao Ling Zhang Zheng Zhu Fan Shen Heng Tao Shen Fumin Qin Jie	Inception Institute Of Artificial Intelligence, Ltd.	2021	United States Patent and Trademark Office	13	http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=10885379
TEXT BASED IMAGE SEARCH	Gong, Shaogang Zhu, Xiatian Dong, Qi	Vision Semantics Limited	2021	World Intellectual Property Organization	13	http://v3.espacenet.com/textdoc?DB=EPODOC&IDX=WO2021028656&F=0
Text based image search	Qi Dong Shaogang Gong Xiatian Zhu	Vision Semantics Ltd	2021	UK Intellectual Property Office	13	http://v3.espacenet.com/textdoc?DB=EPODOC&IDX=GB2586265&F=0
SYSTEME, VERFAHREN UND MEDIEN ZUR STEUERUNG DES FEEDBACK VON KÜNSTLICHER INTELLIGENZ IN DER GENERATIVEN FERTIGUNGSYSTEMS, METHODS, AND MEDIA FOR ARTIFICIAL INTELLIGENCE FEEDBACK CONTROL IN ADDITIVE MANUFACTURINGSYSTEMES, PROCÉDÉS ET SUPPORTS POUR COMMANDE DE RÉTROACTION D'INTELLIGENCE ARTIFICIELLE DANS LA FABRICATION ADDITIVE	Pinskiy, Vadim Williams, James Putman, Matthew, C. Limoge, Damas Nirmaleswaran, Aswin, Raghav Chris, Mario	Nantronics Imaging, Inc.	2021	European Patent Office	13	http://v3.espacenet.com/textdoc?DB=EPODOC&IDX=EP3774281&F=0
Location estimating apparatus and method, learning apparatus and method, and computer program products	Tazoe Yusuke Nakashima Ryo Watanabe Tomoki Seki Akihito	Kabushiki Kaisha Toshiba Toshiba Electronic Devices & Storage Corporation	2021	United States Patent and Trademark Office	12	http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=11062475
Determining occupancy of occluded regions	Gier Max Silva William Anthony	Zoox, Inc.	2021	United States Patent and Trademark Office	12	http://patft.uspto.gov/netacgi/nph-Parser?patentnumber=11016492

8 Akıllı Tarım , Orman Yangınları , Yapay Zekada Etik

8.1 Akıllı Tarım

Dünyada 2020-2022 yıllarında Smart Agriculture alanında yapılmış en çok atıf alan 50 makale listesi aşağıdaki gibidir;

Tablo 16 Dünyada 2020-2022 Yıllarında Smart Agriculture Alanında Yapılmış En Çok Atıf Alan 50 Makale Listesi

Title	Year	SNIP (publ icati on year)	CiteS core (publ icati on year)	SJR (publ icati on year)	Cit ati ons	Field- Weigh ted Citation Impac t	Institutions	Num ber of Instit utio ns	Country/ Region	All Science Journal Classification (ASJC) field name	Sustain able Develo pment Goals (2022)	Topic name
Blockchain for 5G-enabled IoT for industrial automation: A systematic review, solutions, and challenges	2020	3,01	13,2	2,275	234	33,92	Thapar University Nirma University	2	India	Computer Science Applications Signal Processing Aerospace Engineering Civil and Structural Engineering Control and Systems Engineering Mechanical Engineering	SDG 9 SDG 11	Bitcoin,Ethereum,Internet Of Things
A compilation of UAV applications for precision agriculture	2020	1,74	8,1	0,798	192	24,04	University of Peloponnese University of Western Macedonia University of Sheffield	3	Greece	Computer Networks and Communications	SDG 2 SDG 8 SDG 13	Antenna,Precision Agriculture,Orthophoto
A systematic literature review on machine learning applications for sustainable agriculture supply chain performance	2020	2,14	8,2	1,506	136	21,87	University of the West of England National Institute of Industrial Engineering California State University Bakersfield University of Derby	4	India United Kingdom United States	General Computer Science Management Science and Operations Research Modeling and Simulation	SDG 2 SDG 6 SDG 8 SDG 12	Synthetic Biology,Technoscience,Biotechnology
Enabling technologies and sustainable smart cities	2020	2,37	10,7	1,645	132	15,81	Polytechnic Institute of Viana do Castelo Jamia Hamdard University	2	India Portugal	Renewable Energy, Sustainability and the Environment Civil and Structural Engineering Geography, Planning and Development Transportation	SDG 2 SDG 9 SDG 11	Smart Cities,Big Data,Internet of Things
Security and Privacy in Smart Farming: Challenges and Opportunities	2020	1,44	4,8	0,587	130	20,98	University of North Carolina at Wilmington Manhattan College Tennessee Technological University North Carolina State University	4	United States	General Computer Science General Engineering General Materials Science	SDG 2 SDG 7	Fog Computing,Network Protocol,Internet of Things

Action needed for the EU Common Agricultural Policy to address sustainability challenges	2020	1,6	-	-	123	25,23	University of Porto Martin Luther University Halle-Wittenberg Helmholtz Centre for Environmental Research Czech University of Life Sciences Prague Humboldt University of Berlin Johann Heinrich von Thunen Institute University of Göttingen University of Lisbon Friedrich Schiller University Jena University of Innsbruck University of Helsinki University of Vienna Leipzig University	13	Austria Finland Germany Portugal Czech Republic	Ecology, Evolution, Behavior and Systematics	SDG 2 SDG 8 SDG 12 SDG 13 SDG 15	Agri-Environment,Birds, Skylark Rocket Vehicle
A Survey on LoRa Networking: Research Problems, Current Solutions, and Open Issues	2020	11,62	62,1	6,605	117	16,67	University of Electronic Science and Technology of China University of California Merced	2	China United States	Electrical and Electronic Engineering	SDG 2 SDG 7 SDG 9 SDG 11	Chloralodol, Hyaluronate Lyase, Low Power
An intelligent Edge-IoT platform for monitoring livestock and crops in a dairy farming scenario	2020	1,67	8,6	0,781	95	11,52	Universidad de Salamanca	1	Spain	Computer Networks and Communications Hardware and Architecture Software	SDG 2 SDG 9 SDG 12	Edge Computing, Internet Of Things, Location Awareness
PrivySharing: A blockchain-based framework for privacy-preserving and secure data sharing in smart cities	2020	2,59	8,5	0,861	91	31,05	CSIRO University of Technology Sydney	2	Australia	General Computer Science Law	SDG 7 SDG 9 SDG 11	Bitcoin, Ethereum, Internet Of Things
Blockchain-Based Agri-Food Supply Chain: A Complete Solution	2020	1,44	4,8	0,587	84	13,55	King Saud University Umm Al-Qura University COMSATS University Islamabad	3	Saudi Arabia Pakistan	General Computer Science General Engineering General Materials Science	-	Bitcoin, Ethereum, Internet Of Things
Super-Durable, Low-Wear, and High-Performance Fur-Brush Triboelectric Nanogenerator for Wind and Water Energy Harvesting for Smart Agriculture	2021	3,18	46,7	8,226	74	15,9	Georgia Institute of Technology University of Chinese Academy of Sciences Guangxi University Chinese Academy of Sciences	4	China United States	Renewable Energy, Sustainability and the Environment General Materials Science	-	Nanogenerators, Piezoelectric, Energy Harvesting
Unmanned Aerial Vehicles in Smart Agriculture: Applications,	2021	1,5	6,1	0,926	73	26,53	University of New Brunswick Charles Darwin University Capital University	5	India South Korea Australia	Electrical and Electronic Engineering Instrumentation	SDG 2	Irrigation (Agriculture), Automatic Irrigation Systems, Internet Of Things

Requirements, and Challenges							of Science & Technology Vellore Institute of Technology Pusan National University		Pakistan Canada			
An energy efficient and secure IoT-based WSN framework: An application to smart agriculture	2020	1,58	5,8	0,63 6	71	10,01	King Saud University Islamia College Peshawar	2	Saudi Arabia Pakistan	Biochemistry Analytical Chemistry Information Systems Electrical and Electronic Engineering Instrumentation Atomic and Molecular Physics, and Optics	SDG 2 SDG 7 SDG 9	Irrigation (Agriculture), Automatic Irrigation Systems, Internet Of Things
A metaheuristic optimization approach for energy efficiency in the IoT networks	2021	1,12	4,8	0,77 4	70	17,12	Manchester Metropolitan University Central South University of Forestry & Technology Vellore Institute of Technology Sejong University	4	India United Kingdom South Korea China	Software	SDG 7 SDG 11 SDG 12	Routing Protocols, Energy Efficient, Wireless Sensor Networks
Automated agrifood futures: robotics, labor and the distributive politics of digital agriculture	2020	3,38	9,1	3,11	67	29,3	Colorado State University	1	United States	Arts and Humanities (miscellaneous) Anthropology Cultural Studies	-	Fair Trade, Global Value Chains, Global Production Networks
IoT-blockchain enabled optimized provenance system for food industry 4.0 using advanced deep learning	2020	1,58	5,8	0,63 6	65	9,17	Jeju National University	1	South Korea	Biochemistry Analytical Chemistry Information Systems Electrical and Electronic Engineering Instrumentation Atomic and Molecular Physics, and Optics	SDG 9	Bitcoin, Ethereum, Internet Of Things
A Survey on Smart Agriculture: Development Modes, Technologies, and Security and Privacy Challenges	2021	2,65	13	2,13 2	61	17,59	University of Guelma University of Lincoln Shanghai Jiao Tong University Nanjing Agricultural University	4	Algeria United Kingdom China	Artificial Intelligence Information Systems Control and Systems Engineering	SDG 2	Fog Computing, Network Protocol, Internet of Things
IoT Ecosystem: A Survey on Devices, Gateways, Operating Systems, Middleware and Communication	2020	0,67	3,1	0,28 8	61	8,06	Sant Longowal Institute of Engineering and Technology	1	India	Computer Networks and Communications Hardware and Architecture Electrical and Electronic Engineering	SDG 7 SDG 11	Fog Computing, Network Protocol, Internet of Things
Conservation agriculture for sustainable intensification in South Asia	2020	4,91	15,8	4,51 4	59	8,93	International Maize and Wheat Improvement Center ICAR - Indian Agricultural Research Institute University of California at Davis Cornell University	4	India Mexico United States Bangladesh	Food Science Renewable Energy, Sustainability and the Environment Ecology Global and Planetary Change Management, Monitoring, Policy and Law Nature and Landscape Conservation Geography, Planning and Development Urban Studies	SDG 2 SDG 8 SDG 12 SDG 13	Agriculture, Indo-Gangetic Plain, Tillage
Vine disease detection in UAV multispectral images using	2020	2,4	8,6	1,20 8	59	11,77	Université d'Orléans	1	France	Agronomy and Crop Science Forestry Horticulture Computer Science Applications	SDG 2 SDG 3 SDG 8	Object Detection, Deep Learning, IOU

optimized image registration and deep learning segmentation approach											
LoraFarM: A LoRaWAN-based smart farming modular IoT architecture	2020	1,58	5,8	0,63 6	58	8,28	University of Parma	1	Italy	Biochemistry Analytical Chemistry Electrical and Electronic Engineering Instrumentation Atomic and Molecular Physics, and Optics	SDG 2 SDG 7 SDG 8 SDG 12
Internet of Things: Evolution and technologies from a security perspective	2020	2,37	10,7	1,64 5	57	6,83	Manchester Metropolitan University	1	United Kingdom	Renewable Energy, Sustainability and the Environment Civil and Structural Engineering Geography, Planning and Development Transportation	SDG 2 SDG 7 SDG 11
A Trustworthy Privacy Preserving Framework for Machine Learning in Industrial IoT Systems	2020	3,5	17,7	2,49 6	56	7,47	CSIRO Royal Melbourne Institute of Technology University University of Oklahoma	3	United States Australia	Computer Science Applications Information Systems Control and Systems Engineering Electrical and Electronic Engineering	SDG 2 SDG 9
An overview of security and privacy in smart cities' IoT communications	2022	-	-	-	55	19,38	Middle East Technical University	1	Turkey	Electrical and Electronic Engineering	SDG 11
A secure fish farm platform based on blockchain for agriculture data integrity	2020	2,4	8,6	1,20 8	53	10,57	Jeju National University	1	South Korea Pakistan	Agronomy and Crop Science Forestry Horticulture Computer Science Applications	SDG 2
Low input sustainable agriculture: A viable climate-smart option for boosting food production in a warming world	2020	1,63	7,5	1,31 5	52	8,8	Banaras Hindu University Veer Chandra Singh Garhwal Uttarakhand University of Horticulture & Forestry ICAR - Indian Institute of Soil and Water Conservation	3	India	Ecology, Evolution, Behavior and Systematics General Decision Sciences Ecology	SDG 2 SDG 8 SDG 12 SDG 13
Industrial Internet of Things and its Applications in Industry 4.0: State of The Art	2021	1,54	7,8	1,30 1	50	15,67	Kalinga Institute of Industrial Technology King Saud University Vanderbilt University University of Teramo Aditya Institute of Technology and Management SRM University Lovely Professional University	7	India Saudi Arabia United States Italy	Computer Networks and Communications	SDG 7 SDG 9
Digital twins in smart farming	2021	2,2	9,7	1,54 9	50	29,49	Wageningen University & Research	1	Netherlands	Agronomy and Crop Science Animal Science and Zoology	SDG 2
Wireless technologies for smart agricultural	2020	2,4	8,6	1,20 8	49	9,78	University of Guelph	1	Canada	Agronomy and Crop Science Forestry	SDG 7

monitoring using internet of things devices with energy harvesting capabilities									Horticulture Computer Science Applications		
Agroview: Cloud-based application to process, analyze and visualize UAV-collected data for precision agriculture applications utilizing artificial intelligence	2020	2,4	8,6	1,208	48	9,58	University of Florida	1	United States	Agronomy and Crop Science Forestry Horticulture Computer Science Applications	SDG 2
CNN feature based graph convolutional network for weed and crop recognition in smart farming	2020	2,4	8,6	1,208	47	9,38	University of Sydney Shandong Agricultural University Baoji University of Arts and Sciences	3	China Australia	Agronomy and Crop Science Forestry Horticulture Computer Science Applications	SDG 2
Experience versus expectation: farmers' perceptions of smart farming technologies for cropping systems across Europe	2020	1,9	8,7	1,023	47	11,13	Leibniz Centre for Agricultural Landscape Research University of Hohenheim	2	Germany	General Agricultural and Biological Sciences	SDG 2 SDG 8 SDG 9
IoT enabled cancer prediction system to enhance the authentication and security using cloud computing	2021	1,73	3,2	0,538	47	13,09	Majmaah University Anna University SRM University	3	India Saudi Arabia	Artificial Intelligence Computer Networks and Communications Hardware and Architecture Software	SDG 3 SDG 11
Hybrid deep learning predictor for smart agriculture sensing based on empirical mode decomposition and gated recurrent unit group model	2020	1,58	5,8	0,636	46	6,49	Beijing Technology and Business University	1	China	Biochemistry Analytical Chemistry Information Systems Electrical and Electronic Engineering Instrumentation Atomic and Molecular Physics, and Optics	SDG 2
Economic data analytic AI technique on IoT edge devices for health monitoring of agriculture machines	2020	1,75	6,8	0,791	44	4,59	Oakland University Banasthali University Deere Osaka University Centre for Development of Advanced Computing, India Universidad Internacional de La Rioja	6	India Spain Japan United States	Artificial Intelligence	SDG 7
Drivers, barriers and social considerations for AI adoption in business and management: A tertiary study	2020	1,63	4,2	0,819	41	8,31	University of Hertfordshire	1	United Kingdom	Business and International Management Education Human Factors and Ergonomics Sociology and Political Science	SDG 8 SDG 11

Smart plant-wearable biosensor for in-situ pesticide analysis	2020	1,76	19,4	2,54 6	41	5,65	Zhejiang Agriculture and Forestry University East China University of Science and Technology Zhejiang University	3	China	Biophysics Biotechnology Electrochemistry Biomedical Engineering	SDG 2	Strain Sensor, Flexible Electronics, Sensor
Smart Secure Sensing for IoT-Based Agriculture: Blockchain Perspective	2021	1,5	6,1	0,92 6	39	14	Charles Darwin University Thapar University International Institute of Information Technology Hyderabad King Abdulaziz University Asia University Taiwan	5	Taiwan India Saudi Arabia Australia	Electrical and Electronic Engineering Instrumentation	SDG 7 SDG 9 SDG 12	Bitcoin, Ethereum, Internet Of Things
A Novel Attack Detection Scheme for the Industrial Internet of Things Using a Lightweight Random Neural Network	2020	1,44	4,8	0,58 7	39	6,29	Fudan University Edinburgh Napier University	2	United Kingdom China	General Computer Science General Engineering General Materials Science	SDG 9 SDG 11	Intrusion Detection System, Network Security, Denial-Of-Service Attack
Analysis of the scientific production of the effect of COVID-19 on the environment: A bibliometric study	2021	1,67	9,5	1,50 7	39	11,11	University of Granada	1	Spain	Biochemistry General Environmental Science	SDG 6 SDG 12 SDG 13	Environmental Pollution, Medical Waste, COVID-19
SP2F: A secured privacy-preserving framework for smart agricultural Unmanned Aerial Vehicles	2021	1,8	9,3	1,59 2	38	12,4	Vellore Institute of Technology Brandon University China Medical University National Institute of Technology Raipur	4	India China Canada	Computer Networks and Communications	SDG 2	Bitcoin, Ethereum, Internet Of Things
What Are the Implications of Digitalisation for Agricultural Knowledge?	2020	1,08	2,4	0,72 9	38	6,48	University of Gloucestershire	1	United Kingdom	Agronomy and Crop Science Food Science Horticulture Ecology Global and Planetary Change Management, Monitoring, Policy and Law	SDG 2 SDG 9	Agricultural Extension, Consultants, Agriculture
Smartphone use and income growth in rural China: empirical results and policy implications	2020	1,9	5,3	0,56 3	38	7,29	Lincoln University Australian National University	2	Australia New Zealand	Human-Computer Interaction Economics, Econometrics and Finance (miscellaneous)	SDG 1 SDG 2 SDG 5 SDG 8 SDG 10	Cell Phone Use, Market Information, Agriculture
Smart farming and short food supply chains: Are they compatible?	2020	1,85	7,5	1,66 8	37	6,42	International Hellenic University Aristotle University of Thessaloniki	2	Greece	Forestry Management, Monitoring, Policy and Law Nature and Landscape Conservation Geography, Planning and Development	-	Community Supported Agriculture, Urban Agriculture, Local Food Systems
IoT based smart agrotech system for verification of	2021	1,73	3,2	0,53 8	37	10,25	Khulna University of Engineering and Technology	5	Iraq Hong Kong	Artificial Intelligence Computer Networks and Communications	SDG 6 SDG 11	Edge Computing, Internet

Urban farming parameters							Al-Muthanna University Trakya University City University of Hong Kong University Of Anbar		Turkey Bangladesh	Hardware and Architecture Software		Of Things,Location Awareness
Towards smart farming: Systems, frameworks and exploitation of multiple sources	2020	1,74	8,1	0,79 8	36	4,51	Technical University of Crete University of Western Macedonia University of Sheffield	3	United Kingdom Greece	Computer Networks and Communications	SDG 2 SDG 8	Land Suitability,Storie,Agriculture
Enabling Precision Agriculture through Embedded Sensing with Artificial Intelligence	2020	1,96	6,1	0,82	36	5,74	Skolkovo Institute of Science and Technology German Aerospace Center	2	Germany Russian Federation	Electrical and Electronic Engineering Instrumentation	SDG 2 SDG 7	Phenomics,Root Systems,Crops
Internet of Things Empowered Smart Greenhouse Farming	2020	1,07	-	-	36	5,43	University of British Columbia National Research Council of Canada	2	Canada	Computer Networks and Communications Instrumentation	SDG 2 SDG 8 SDG 12	Irrigation (Agriculture),Automatic Irrigation Systems,Internet Of Things
Machine learning based fog computing assisted data-driven approach for early lameness detection in dairy cattle	2020	2,4	8,6	1,20 8	35	6,98	IBM South East Technological University	2	Ireland	Agronomy and Crop Science Forestry Horticulture Computer Science Applications	-	Digital Dermatitis,Cattle,Dairy Cows
Electronic agriculture, blockchain and digital agricultural democratization: Origin, theory and application	2020	2,45	13,1	1,93 7	35	3,49	Beijing Institute of Technology	1	China	Strategy and Management Renewable Energy, Sustainability and the Environment Industrial and Manufacturing Engineering General Environmental Science	SDG 9 SDG 16	Bitcoin,Ethereum,Internet Of Things

Türkiye'de 2020-2022 yıllarında Smart Agriculture alanında yapılmış en çok atıf alan makalelerin listesi aşağıdaki gibidir;

Tablo 17 Türkiye'de 2020-2022 Yıllarında Smart Agriculture Alanında Yapılmış En Çok Atıf Alan Makalelerin Listesi

Title	Year	SNIP (publication year)	CiteScore (publication year)	SJR (publication year)	Citations	Field - Weighted Citation Impact	Institutions	Number of Institutions	Country/Region	All Science Journal Classification (ASJC) field name	Sustainable Development Goals (2022)	Topic name
An overview of security and privacy in smart cities' IoT communications	2022	-	-	-	55	19,3 8	Middle East Technical University	1	Turkey	Electrical and Electronic Engineering	SDG 11	Smart Cities,Big Data,Internet of Things

IoT based smart agrotech system for verification of Urban farming parameters	2021	1,73	3,2	0,538	37	10,25	Khulna University of Engineering and Technology Al-Muthanna University Trakya University City University of Hong Kong University Of Anbar	5	Iraq Hong Kong Turkey Bangladesh	Artificial Intelligence Computer Networks and Communications Hardware and Architecture Software	SDG 6 SDG 11	Edge Computing,Internet Of Things,Location Awareness
Smart Farming Becomes even Smarter with Deep Learning - A Bibliographical Analysis	2020	1,44	4,8	0,587	29	4,52	-	0	Turkey	General Computer Science General Engineering General Materials Science	SDG 2 SDG 6	Object Detection,Deep Learning,IOU
Cassava disease recognition from low-quality images using enhanced data augmentation model and deep learning	2021	0,95	4,7	0,599	23	7,46	Silesian University of Technology Vytautas Magnus University Atilim University Covenant University Kaunas University of Technology	5	Nigeria Poland Lithuania Turkey	Artificial Intelligence Computational Theory and Mathematics Control and Systems Engineering Theoretical Computer Science	-	Object Detection,Deep Learning,IOU
A Novel Distributed CDS Algorithm for Extending Lifetime of WSNs with Solar Energy Harvester Nodes for Smart Agriculture Applications	2020	1,44	4,8	0,587	15	2,42	Pamukkale University	1	Turkey	General Computer Science General Engineering General Materials Science	SDG 2 SDG 7	Energy Harvesting,Internet Of Things,Power Allocation
Software architecture of the internet of things (IoT) for smart city, healthcare and agriculture: analysis and improvement directions	2021	1,69	6,5	0,913	15	5,83	Atilim University Molde University College	2	Norway Serbia Turkey	General Computer Science	SDG 11	Fog Computing,Network Protocol,Internet of Things

Agrilora: A digital twin framework for smart agriculture	2020	1,14	3	0,28 1	13	1,94	Middle East Technical University University of Essex	2	United Kingdom Turkey	Computer Science (miscellaneous) Computer Networks and Communications Computer Science Applications	SDG 2	Chloralodol,Hyaluronate Lyase,Low Power
Smart agriculture with internet of things in cornfields	2021	1,75	8,8	1,11 2	12	4,24	Duzce University	1	Turkey	General Computer Science Control and Systems Engineering Electrical and Electronic Engineering	SDG 7	Irrigation (Agriculture),Automatic Irrigation Systems,Internet Of Things
BlockChain with IoT, an emergent routing scheme for smart agriculture	2020	0,55	1,1	0,19 3	12	2,12	Gomal University Erbil Polytechnic University Near East University	3	United Arab Emirates Iraq Turkey Pakistan	General Computer Science	SDG 7	Fog Computing,Network Protocol,Internet of Things
A Long-range context-aware platform design for rural monitoring with IoT In precision agriculture	2020	1,04	4,3	0,42 2	9	1,26	Trakya University	1	Turkey	Computational Theory and Mathematics Computer Networks and Communications Computer Science Applications	SDG 2 SDG 11	Chloralodol,Hyaluronate Lyase,Low Power
An Effective Yield Estimation System Based on Blockchain Technology	2020	1,21	4,3	0,70 2	7	0,89	Ankara University	1	Turkey	Strategy and Management Electrical and Electronic Engineering	-	Crop Insurance,Weather Derivatives,Agriculture
A Blockchain and Metaheuristic-Enabled Distributed Architecture for Smart Agricultural Analysis and Ledger Preservation Solution: A Collaborative Approach	2022	-	-	-	4	8,11	Sindh Madressatul Islam University Vilnius University Almaty Institute of Power Engineering and Telecommunications Peter the Great St. Petersburg Polytechnic University Plekhanov Russian University of Economics Ege University	6	Kazakhstan Lithuania Turkey Pakistan Russian Federation	Fluid Flow and Transfer Processes Process Chemistry and Technology Computer Science Applications General Engineering General Materials Science Instrumentation	SDG 2	Bitcoin,Ethereum,Internet Of Things
Adaptive Metaheuristic-Based Methods for Autonomous Robot Path Planning: Sustainable	2022	-	-	-	3	6,08	Istanbul Sabahattin Zaim University Istanbul University Nisantasi Universitesi University of Messina Istinye	6	Turkey Italy	Fluid Flow and Transfer Processes Process Chemistry and Technology Computer Science Applications General Engineering General Materials Science Instrumentation	SDG 2 SDG 8 SDG 12 SDG 13	Ant Colony Optimisation,Artificial Potential Field,Mobile Robots

Agricultural Applications							University Beykent University						
Modelling and analysis of IoT technology using neural networks in agriculture environment	2020	1,04	4,3	0,42	2	3	0,42	European University of Lefke	1	Turkey	Computational Theory and Mathematics Computer Networks and Communications Computer Science Applications	SDG 2	Internet of Things,Irrigation (Agriculture),Sensor
The assessment of a smart system in hydroponic vertical farming via fuzzy MCDM methods	2022	-	-	-	2	4,69	Galatasaray University	1	Turkey	Artificial Intelligence General Engineering Statistics and Probability	SDG 13	Greenhouses,Micr oclimate,Temperat ure	
Deep learning-based classification models for beehive monitoring	2021	1,44	5,4	0,86	8	1	0,4	Eskisehir Technical University Osmangazi University	2	Turkey	Ecology, Evolution, Behavior and Systematics Computational Theory and Mathematics Computer Science Applications Ecological Modeling Ecology Applied Mathematics Modeling and Simulation	-	Object Detection,Deep Learning,IOU
A survey on communication protocols and performance evaluations for Internet of Things	2022	-	-	-	1	2,24	Kocaeli University Sakarya University	2	Turkey	Computer Networks and Communications Hardware and Architecture	SDG 11	Fog Computing,Networ k Protocol,Internet of Things	
Hydroponic system evaluation in urban farming via fuzzy EDAS and TODIM methods	2020	0,68	2,8	0,33	1	1	0,19	Galatasaray University	1	Turkey	Artificial Intelligence General Engineering Statistics and Probability	SDG 2	Greenhouse,Vertic al Farming,Food Miles
Design and implementation of a smart beehive and its monitoring system using microservices in the context of IoT and open data	2022	-	-	-	0	0	Isik University Kadir Has University	2	Turkey	Agronomy and Crop Science Forestry Horticulture Computer Science Applications	-	Beehives,Beekeepe rs,Bees	
Based on mesh sensor network:	2022	-	-	-	0	0	Al-Farahidi University Altinbas University	3	Iraq Turkey	Computer Networks and Communications Hardware and Architecture Information Systems Signal Processing	SDG 7	Automation,Rubus, Household Equipment	

design and implementation of security monitoring system with Bluetooth technology						Middle Technical University			Electrical and Electronic Engineering Control and Optimization		
Data immutability and event management via blockchain in the Internet of things	2022	-	-	-	0	0	Dokuz Eylul University Ege University	2	Turkey	General Computer Science Electrical and Electronic Engineering	SDG 2 SDG 7 SDG 9
A Smart and Mechanized Agricultural Application : From Cultivation to Harvest	2022	-	-	-	0	0	Istanbul University Nisantasi Universitesi University of Messina Istinye University	4	Turkey Italy	Fluid Flow and Transfer Processes Process Chemistry and Technology Computer Science Applications General Engineering General Materials Science Instrumentation	SDG 2 SDG 8 SDG 12 SDG 13

8.2 Orman Yangınları

Dünyada 2020-2022 yıllarında Wildfire alanında yapılmış en çok atıf alan 50 makale listesi aşağıdaki gibidir;

Tablo 18 Dünyada 2020-2022 Yıllarında AI Ethics Alanında Yapılmış En Çok Atıf Alan 50 Makale Listesi

Title	Year	SNIP (publication year)	CiteScore (publication year)	SJR (publication year)	Citations	Field-Weighted Citation Impact	Institutions	Number of Institutions	Country/Region	All Science Journal Classification (ASJC) field name	Sustainable Development Goals (2022)	Topic name
Loss of life expectancy from air pollution compared to other risk factors: A worldwide perspective	2020	1,77	12,6	2,774	213	29,75	King Saud University London School of Hygiene and Tropical Medicine Max Planck Institute for Chemistry Johannes Gutenberg University Mainz	4	United Kingdom Saudi Arabia Germany Cyprus	Physiology Cardiology and Cardiovascular Medicine Physiology (medical)	SDG 3 SDG 13	Air Quality,Ultradefine Particulate Matter,Respiratory Tract Infections
Health effects of climate change: An overview of systematic reviews	2021	1,29	3,9	0,982	160	78,93	University of Winnipeg University of Toronto Université Laval	3	Canada	General Medicine	SDG 13	Heat Wave,Climate Change,Distributed Lag

Climate change is increasing the likelihood of extreme autumn wildfire conditions across California	2020	1,9	8,6	2,37	152	17,55	University of Idaho National Center for Atmospheric Research University of California at Los Angeles University of California Merced Stanford University Columbia University The Nature Conservancy	7	United States	Renewable Energy, Sustainability and the Environment General Environmental Science Public Health, Environmental and Occupational Health	SDG 7 SDG 13	Fuel Treatment, Climate Change, Fire Severity
Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem	2021	1,67	9,5	1,507	124	35,34	University of Leicester University of Birmingham Harvard University	3	United Kingdom United States	Biochemistry General Environmental Science	SDG 3 SDG 13	Pollution Exposure, Asthma, Air Quality
The Effect of COVID-19 on Mental Health and Wellbeing in a Representative Sample of Australian Adults	2020	1,21	3,5	1,363	103	14,65	Australian National University	1	Australia	Psychiatry and Mental Health	SDG 3	Psychological Support, Mindfulness, COVID-19
The gathering firestorm in southern Amazonia	2020	3,46	16,6	5,928	79	6,35	Woods Hole Research Center University of California at Irvine World Bank Universidade Federal de Minas Gerais Instituto de Pesquisa Ambiental da Amazônia NASA Goddard Space Flight Center	6	United States Brazil	Multidisciplinary	SDG 13	Tropical Rain Forest, Forest Degradation, Brazilian Amazon
Environmental degradation & role of financialisation, economic development, industrialisation and trade liberalisation	2021	1,91	11,4	1,481	76	16,15	University of Sydney University of Economics Ho Chi Minh City University of Huddersfield	3	United Kingdom Australia Viet Nam	Environmental Engineering Management, Monitoring, Policy and Law Waste Management and Disposal	SDG 8 SDG 9 SDG 13	Environmental Kuznets Curve, China, Trade Openness
Warmer and Drier Fire Seasons Contribute to Increases in Area Burned at High Severity in Western US Forests From 1985 to 2017	2020	1,49	7,8	2,007	76	12,13	United States Department of Agriculture University of California Merced	2	United States	General Earth and Planetary Sciences Geophysics	SDG 13	Fuel Treatment, Climate Change, Fire Severity
Wildfires, global climate change, and human health	2020	14,48	80,6	19,889	75	9,8	London School of Hygiene and Tropical Medicine Colorado State University University of Colorado Anschutz Medical Campus Yale University Monash University University of Tasmania University of Washington	7	United Kingdom United States Australia	General Medicine	SDG 13	Air Quality, Smoke, Prescribed Burning

End-Permian (252 Mya) deforestation, wildfires and flooding—An ancient biotic crisis with lessons for the present	2020	1,76	9,5	2,829	64	10,14	University of Nebraska-Lincoln Lund University Swedish Museum of Natural History	3	United States Australia Sweden	Earth and Planetary Sciences (miscellaneous) Geochemistry and Petrology Geophysics Space and Planetary Science	SDG 14 SDG 15	Lower Triassic, Species Extinction, Conodont
Wildfire smoke impacts respiratory health more than fine particles from other sources: observational evidence from Southern California	2021	3,34	23,2	4,846	63	15	Human Longevity, Inc. University of California at San Diego	2	United States	General Biochemistry, Genetics and Molecular Biology General Chemistry General Physics and Astronomy	SDG 3	Air Quality, Smoke, Prescribed Burning
STATE OF THE CLIMATE IN 2019	2020	2,93	13,5	3,367	60	7,6	National Oceanic and Atmospheric Administration	1	United States	Atmospheric Science	SDG 11 SDG 13 SDG 14 SDG 15	Wind Speed, Eddy Covariance, Land Surface Temperature
Wildfire management in Canada: Review, challenges and opportunities	2020	1,6	2,4	-	58	9,74	University of Alberta	1	Canada	Earth and Planetary Sciences (miscellaneous) Environmental Science (miscellaneous) Geography, Planning and Development Safety Research	SDG 13	Picea Mariana, Wild fire, Boreal
Unprecedented health costs of smoke-related PM _{2.5} from the 2019–20 Australian megafires	2021	5,42	30,7	5,789	53	18,86	University of Sydney University of Melbourne University of Tasmania Ingham Institute University of New South Wales	5	Australia	Food Science Renewable Energy, Sustainability and the Environment Ecology Global and Planetary Change Management, Monitoring, Policy and Law Nature and Landscape Conservation Geography, Planning and Development Urban Studies	SDG 3	Air Quality, Smoke, Prescribed Burning
African burned area and fire carbon emissions are strongly impacted by small fires undetected by coarse resolution satellite data	2021	3,06	18,1	4,184	52	12,77	University of Alcalá University of the Basque Country Vrije Universiteit Amsterdam	3	Spain Netherlands	Multidisciplinary	SDG 13	Biomass Burning, Remote Sensing, Wildfires
Extensive land cover change across Arctic—	2020	2,69	15,5	4,146	52	6,15	University of Montreal Boston University	3	United States Canada	General Environmental Science Ecology	SDG 13	Thermokarst, Arctic, Thaw

Boreal Northwestern North America from disturbance and climate forcing							University of California at San Diego			Environmental Chemistry Global and Planetary Change		
Fire and climate change: conserving seasonally dry forests is still possible	2020	2,82	14,6	3,91 8	51	10,03	University of Wisconsin- Madison University of Western Australia University of California at Berkeley Colorado State University University of California Merced University of New Mexico	6	United States Australia	Ecology, Evolution, Behavior and Systematics Ecology	SDG 6 SDG 13 SDG 15	Fuel Treatment,Cli- mate Change,Fire Severity
Fire severity and soil erosion susceptibility mapping using multi-temporal Earth Observation data: The case of Mati fatal wildfire in Eastern Attica, Greece	2020	1,67	8,1	1,44	50	8,81	Czech University of Life Sciences Prague Agricultural University of Athens European Commission Joint Research Centre Institute	3	Greece Italy Czech Republic	Earth-Surface Processes	SDG 11 SDG 15	Water Repellent Soils,Soil,Wild fires
Fire regime in the Brazilian Savanna: Recent changes, policy and management	2020	0,92	3,3	0,54 9	47	9,21	Université de Montpellier CNRS Universidade de Brasília Université Paul- Valéry Montpellier III	4	France	Ecology, Evolution, Behavior and Systematics Plant Science Ecology	-	Encroachmen- t,Ecosystem,S avannas
CO2 utilization: Turning greenhouse gas into fuels and valuable products	2020	1,85	9,8	1,44 1	46	4,54	Ho Chi Minh City University of Transport University of Tehran National University of Sciences and Technology Pakistan Qatar Foundation Government College University Lahore King Abdulaziz University Hamad bin Khalifa University Universiti Teknologi MARA Agriculture Biotechnology Research Institute of Iran	9	Qatar Saudi Arabia Pakistan Malaysia Iran Viet Nam	Environmental Engineering Management, Monitoring, Policy and Law Waste Management and Disposal	SDG 1 SDG 6 SDG 7 SDG 8 SDG 11 SDG 13	Photobioreac- tors,Nutrient Removal,Wa- ste Water
Prescribed fire science: the case for a refined research agenda	2020	0,73	3,3	0,80 9	45	8,65	United States Department of Agriculture University of Idaho Tall Timbers Research Station Desert Research Institute Los Alamos National Laboratory	5	United States	Ecology, Evolution, Behavior and Systematics Forestry Environmental Science (miscellaneous)	-	Fire Spread,Simu- lation,Fuel Bed
Climate-change refugia in boreal North America: what, where, and for how long?	2020	2,82	14,6	3,91 8	44	8,66	University of Minnesota Twin Cities University of Alberta McMaster University Ducks Unlimited United States Geological Survey University of Montreal Parks Canada Université du Québec à Rimouski Memorial University of Newfoundland Wilfrid Laurier University Saskatchewan Research	12	United States Canada	Ecology, Evolution, Behavior and Systematics Ecology	SDG 6 SDG 13 SDG 14 SDG 15	Picea Mariana,Wild fire,Boreal

							Council Natural Resources Canada					
Eucalypt forests dominated by epicormic resprouters are resilient to repeated canopy fires	2020	1,82	9,7	2,45 2	43	8,23	State Government of Victoria La Trobe University	2	Australia	Ecology, Evolution, Behavior and Systematics Plant Science Ecology	SDG 13	Fuel Treatment, Climate Change, Fire Severity
The record-breaking compound hot and dry 2018 growing season in Germany	2020	2,19	7	1,93	43	5,95	University of Bern Swiss Federal Institute of Technology Zurich	2	Switzerland	Atmospheric Science Management, Monitoring, Policy and Law Geography, Planning and Development	-	Heat Wave, China, Geopotential Height
New spatial analyses of Australian wildfires highlight the need for new fire, resource, and conservation policies	2020	2,87	16,2	5,01 1	43	3,46	Australian National University	1	Australia	Multidisciplinary	SDG 12 SDG 15	Wildfires, Wildland-Urban Interface, Disaster
Health impact analysis of PM2.5 from wildfire smoke in Canada (2013–2015, 2017–2018)	2020	1,99	10,5	1,79 5	42	3,47	Environment and Climate Change Canada Health Canada BC Centre for Disease Control	3	Canada	Environmental Chemistry Environmental Engineering Pollution Waste Management and Disposal	SDG 3 SDG 8	Air Quality, Smoke, Prescribed Burning
A distributed control framework of multiple unmanned aerial vehicles for dynamic wildfire tracking	2020	3,67	12,2	2,26 1	42	4,85	NASA Ames Research Center University of Nevada, Reno	2	United States	Computer Science Applications Human-Computer Interaction Software Control and Systems Engineering Electrical and Electronic Engineering	-	Helicopter, National Airspace System, Unmanned Aerial Vehicles
Barriers and enablers for prescribed burns for wildfire management in California	2020	4,91	15,8	4,51 4	41	6,21	University of Miami Stanford University	2	United States	Food Science Renewable Energy, Sustainability and the Environment Ecology Global and Planetary Change Management, Monitoring, Policy and Law Nature and Landscape Conservation Geography, Planning and Development Urban Studies	-	Fuel Treatment, Climate Change, Fire Severity
Economic footprint of California wildfires in 2018	2021	5,42	30,7	5,78 9	41	14,79	Tsinghua University University of California at Irvine East China University of Science and Technology Peking University University	8	United Kingdom Norway China United States	Food Science Renewable Energy, Sustainability and the Environment Ecology Global	SDG 3 SDG 8 SDG 13	Fuel Treatment, Climate Change, Fire Severity

							College London Norwegian University of Science and Technology Beijing Normal University Shanghai University of Finance and Economics			and Planetary Change Management, Monitoring, Policy and Law Nature and Landscape Conservation Geography, Planning and Development Urban Studies		
Wildfire risk science facilitates adaptation of fire-prone social-ecological systems to the new fire reality	2020	1,9	8,6	2,37	40	4,62	United States Department of Agriculture University of Georgia Oregon State University	3	United States	Renewable Energy, Sustainability and the Environment General Environmental Science Public Health, Environmental and Occupational Health	-	Fuel Treatment,Clima te Change,Fire Severity
Increased likelihood of heat-induced large wildfires in the Mediterranean Basin	2020	1,38	7,1	1,24	40	3,22	Universidade Federal do Rio de Janeiro Avignon Université University of Lisbon INRAE University of Patras University of Manouba Université PSL Aix-Marseille Université Université de Montpellier CNRS Université Paul-Valéry Montpellier III Institut de recherche pour le développement Collège de France Montpellier SupAgro École pratique des hautes études	15	Tunisia Portugal Greece France Brazil	Multidisciplinary	SDG 13	Wildfires,Fire Weather,Occ urences
Wildfires in the Siberian taiga	2021	2,1	10,3	1,66 1	40	13,44	Siberian Federal University University of Alberta RAS - Siberian Branch RAS - Sukachev Institute of Forest, Siberian Branch	4	Russian Federation Canada	Ecology Environmental Chemistry Geography, Planning and Development	SDG 14 SDG 15	Picea Mariana,Wild fire,Boreal
Introduced herbivores restore late pleistocene ecological functions	2020	2,87	16,2	5,01 1	39	3,14	University of Sussex University of Massachusetts Natural History Museum of Los Angeles County University of Alcalá Aarhus University University of Technology Sydney University of California at Davis	7	United Kingdom Spain United States Australia Denmark	Multidisciplinary	SDG 15	Rock Art,Megafauna,Archaeology
Rescue Brazil's burning Pantanal wetlands	2020	9,18	56,9	15,9 93	39	3,14	-	0	-	Multidisciplinary	SDG 13	-
Long-term ecological consequences of forest fires in the continuous permafrost zone of Siberia	2020	1,9	8,6	2,37	39	4,5	Siberian Federal University RAS - Siberian Branch RAS - Krasnoyarsk Science Center, Siberian Branch Swiss Federal Institute for Forest, Snow and Landscape Research University of Cambridge RAS - Sukachev Institute of	8	United Kingdom Switzerland Russian Federation Czech Republic	Renewable Energy, Sustainability and the Environment General Environmental Science Public Health, Environmental	SDG 13 SDG 15	Tree Rings,Water Use Efficiency,Oxygen Isotope

							Forest, Siberian Branch Masaryk University Czech Academy of Sciences			and Occupational Health		
Biogeography of fire regimes in western U.S. conifer forests: A trait-based approach	2020	1,95	10	3,16 4	38	6,43	United States Geological Survey University of California at Berkeley Texas Tech University Tall Timbers Research Station California State Polytechnic University, Humboldt	5	United States	Ecology, Evolution, Behavior and Systematics Ecology Global and Planetary Change	-	Fuel Treatment, Climate Change, Fire Severity
Quantification of organic aerosol and brown carbon evolution in fresh wildfire plumes	2020	2,87	16,2	5,01 1	38	3,06	University of Montana National Center for Atmospheric Research University of Wyoming Colorado State University University of Washington	5	United States	Multidisciplinary	-	Biomass Burning, Remote Sensing, Wildfires
Amazon wildfires: Scenes from a foreseeable disaster	2020	0,92	3,3	0,54 9	37	7,25	Woods Hole Research Center University of California at Irvine Universidade Federal Rural da Amazônia Universidade Federal de Viçosa	4	United States Brazil	Ecology, Evolution, Behavior and Systematics Plant Science Ecology	SDG 13	Tropical Rain Forest, Forest Degradation, Brazilian Amazon
Tracing Riverine Particulate Black Carbon Sources in Xijiang River Basin: Insight from Stable Isotopic Composition and Bayesian Mixing Model	2021	2,5	18	2,80 6	37	9,46	China University of Geosciences, Beijing	1	China	Civil and Structural Engineering Ecological Modeling Environmental Engineering Pollution Waste Management and Disposal Water Science and Technology	-	Biochar, Soil, Black Carbon
Carbon loss from boreal forest wildfires offset by increased dominance of deciduous trees	2021	9,12	57,8	14,5 89	36	8,84	University of Florida Auburn University University of Alaska Fairbanks Université de Moncton University of Saskatchewan National Academy of Sciences Northern Arizona University	7	United States Canada	Multidisciplinary	SDG 13	Picea Mariana, Wildfire, Boreal
Globally consistent climate sensitivity of natural disturbances across boreal and temperate forest ecosystems	2020	2,07	11,3	2,97 3	36	7,38	University of Northern British Columbia Government of Quebec Yokohama National University Luke Natural Resources Institute Finland Russian Academy of Sciences Estonian University of Life Sciences University of Helsinki Université du Québec à Montréal Natural Resources Canada Hokkaido University Technical University of Munich St. Petersburg State University University of Natural Resources and Life Sciences, Vienna RAS - Karelian Research Centre	18	Austria Norway Japan Finland United States Germany Russian Federation Estonia Sweden Canada	Ecology, Evolution, Behavior and Systematics	SDG 13	Tree Mortality, Carbohydrate, Basal Area

								Swedish University of Agricultural Sciences Columbia University Tallinn University of Technology Norwegian Institute for Nature Research				
A machine learning-based approach for wildfire susceptibility mapping. The case study of the liguria region in italy	2020	1,16	3,4	0,60 6	36	5,15	University of Lausanne	1	Switzerland Italy	General Earth and Planetary Sciences	SDG 11	Wildfires,Fire Weather,Occurrences
Air quality variations in Northern South America during the COVID-19 lockdown	2020	1,99	10,5	1,79 5	36	2,98	Universidad Nacional de Colombia Universidad Militar Nueva Granada Universidad de La Salle, Bogota Universidad Nacional Abierta y a Distancia	4	Colombia	Environmental Chemistry Environmental Engineering Pollution Waste Management and Disposal	SDG 3 SDG 11	Environmenta l Pollution,Medi cal Waste,Covid -19
Zero-fire: Not possible nor desirable in the Cerrado of Brazil	2020	0,92	3,3	0,54 9	36	7,05	-	0	Brazil	Ecology, Evolution, Behavior and Systematics Plant Science Ecology	SDG 15	Encroachmen t,Ecosystem,S avannas
A deep learning approach for mapping and dating burned areas using temporal sequences of satellite images	2020	3,05	14,9	2,96	34	4,96	The Portuguese Institute for Sea and Atmosphere Universidade Federal do Rio de Janeiro University of Lisbon	3	Portugal Brazil	Computer Science Applications Computers in Earth Sciences Engineering (miscellaneous) Atomic and Molecular Physics, and Optics	-	Biomass Burning,Rem ote Sensing,Wildf ires
Limitations to recovery following wildfire in dry forests of southern Colorado and northern New Mexico, USA	2020	1,47	7,8	1,86 4	33	6,03	University of Colorado Boulder University of North Carolina at Wilmington Colorado State University The Nature Conservancy	4	United States	Ecology	SDG 13 SDG 15	Fuel Treatment,cli mate Change,Fire Severity
Effect of environmental pollutants PM-2.5, carbon monoxide, and ozone on the incidence and mortality of SARS-COV-2 infection in ten wildfire affected counties in California	2021	2,17	14,1	1,80 6	33	5,99	King Saud University Majmaah University	2	Saudi Arabia United States	Environmental Chemistry Environmental Engineering Pollution Waste Management and Disposal	SDG 3	Environmenta l Pollution,Medi cal Waste,Covid -19
Landslides after wildfire: initiation, magnitude, and mobility	2020	2,36	8,9	1,91	33	5,26	United States Geological Survey Helmholtz Centre Potsdam - German Research Centre for Geosciences University of	4	United States Germany	Geotechnical Engineering and Engineering Geology	SDG 15	Water Repellent Soils,Soil,Wild fires

							California at San Diego University of Arizona					
Climate relationships with increasing wildfire in the southwestern US from 1984 to 2015	2020	1,38	5,8	1,288	33	5,83	Utah State University United States Department of Agriculture United States Geological Survey Northern Arizona University	4	United States	Forestry Management, Monitoring, Policy and Law Nature and Landscape Conservation	SDG 6 SDG 13 SDG 15	Fuel Treatment, Climate Change, Fire Severity
Linking forest flammability and plant vulnerability to drought	2020	0,94	3,3	0,676	33	7,16	Université Clermont Auvergne Western Sydney University University of Lleida University of Wollongong INRAE Southwest University of Science and Technology Minzu University of China	7	China Spain Australia France	Forestry	SDG 15	Fire Spread, Simulation, Fuel Bed

Türkiye'de 2020-2022 yıllarında Wildfire alanında yapılmış en çok atıf alan makalelerin listesi aşağıdaki gibidir;

Tablo 19 Türkiye'de 2020-2022 Yıllarında Wildfire Alanında Yapılmış En Çok Atıf Alan Makalelerin Listesi

Title	Year	SNIP (publication year)	CiteScore (publication year)	SJR (publication year)	Citations	Field - Weighted Citation Impact	Institutions	Number of Institutions	Country/Region	All Science Journal Classification (ASJC) field name	Sustainable Development Goals (2022)	Topic name
Additive neural network for forest fire detection	2020	0,94	3,8	0,409	14	1,89	Bilkent University University of Illinois at Chicago	2	United States Turkey	Signal Processing Electrical and Electronic Engineering	-	Fire Detection, Wildfires, Smoke
Two years of post-wildfire impacts on dissolved organic matter, nitrogen, and precursors of disinfection by-products in California stream waters	2020	2,59	15,6	3,099	14	1,56	Clemson University University of California at Berkeley Marmara University University of California at Davis	4	United States Turkey	Civil and Structural Engineering Ecological Modeling Environmental Engineering Pollution Waste Management and Disposal Water Science and Technology	SDG 6	Water Repellent Soils, Soil, Wildfires
A design for addressing multiple ecosystem services in forest management planning	2020	0,94	3,3	0,676	12	2,6	Czech University of Life Sciences Prague University of Lisbon Karadeniz Technical University	3	Portugal Turkey Czech Republic	Forestry	SDG 8 SDG 12 SDG 13 SDG 15 SDG 16	Forest Planning, Forest Management, Timber Production

Quantitative analysis of forest fires in southeastern australia using sar data	2021	1,55	7,4	1,28 3	10	3,92	Istanbul Technical University Charles Sturt University Wuhan University Chinese Academy of Sciences	4	China Turkey Australia	General Earth and Planetary Sciences	SDG 3	Biomass Burning,Remote Sensing,Wildfires
Influence of climatic factor of changes in forest fire danger and fire season length in Turkey	2021	1	4,5	0,62 3	9	2,26	Kastamonu University Bartin University	2	Turkey	General Environmental Science Management, Monitoring, Policy and Law Pollution	-	Wildfires,Fire Weather,Occurrences
Low water treatability efficiency of wildfire-induced dissolved organic matter and disinfection by-product precursors	2020	2,59	15,6	3,09 9	7	0,78	Clemson University Marmara University	2	United States Turkey	Civil and Structural Engineering Ecological Modeling Environmental Engineering Pollution Waste Management and Disposal Water Science and Technology	SDG 6	Disinfection,Haloacetic Acids,Chlorodibromomethane
Evaluation of geomorphometric characteristics and soil properties after a wildfire using Sentinel-2 MSI imagery for future fire-safe forest	2021	2,21	4,4	0,97 2	7	1,9	Bozok University Trier University Kahramanmaraş Sutcu Imam University University of Valencia	4	Spain Germany Turkey	General Chemistry Safety, Risk, Reliability and Quality General Materials Science General Physics and Astronomy	SDG 6 SDG 15	Biomass Burning,Remote Sensing,Wildfires
Perspectives on protected area and wildfire management in the Black Sea region	2020	0,89	2,8	0,47 9	4	0,87	Artvin Coruh University Aristotle University of Thessaloniki National University of Life and Environmental Sciences of Ukraine	3	Armenia Turkey Greece Moldova Ukraine Romania	Forestry	SDG 12 SDG 13 SDG 14 SDG 15	Wildfires,Fire Weather,Occurrences
Factors Affecting the Behavior of Large Forest Fires in Turkey	2021	1,18	6	0,84 4	4	1,35	Bartin University	1	Turkey	Ecology Global and Planetary Change Pollution	-	Wildfires,Fire Weather,Occurrences
Application of an Ensemble Statistical Approach in Spatial Predictions of Bushfire Probability and Risk Mapping	2021	0,87	3,2	0,44 6	3	1,04	Macquarie University Bogazici University RIKEN Flinders University ARC Centre of Excellence for Australian Biodiversity and Heritage	5	Japan Australia Turkey Iran	Control and Systems Engineering Electrical and Electronic Engineering Instrumentation	-	Landslides,Debris Flow,Susceptibility
Investigating the spatiotemporal changes of land use/land cover and its implications for ecosystem services	2022	-	-	-	2	2,68	Karadeniz Technical University	1	Turkey	General Environmental Science Management, Monitoring, Policy and Law Pollution	SDG 12 SDG 15	Landscape Ecology,Patch Size,China

between 1972 and 2015 in Yuvacık												
Wildfire and harvesting effects on carbon dynamics in an oak-pine mixed forest	2020	1	3,7	0,567	1	0,2	Ankara University	1	Turkey	Forestry Ecology Nature and Landscape Conservation	SDG 13	Water Repellent Soils, Soil, Wildfires
Optimization of the distance-constrained multi-based multi-UAV routing problem with simulated annealing and local search-based matheuristic to detect forest fires: The case of Turkey	2021	2,4	12,4	1,959	1	0,27	Turkish National Defence University Turkish Air Force Academy	2	Turkey	Software	-	Fire Detection, Wildfires, Smoke
A novel search and survey technique for unmanned aerial systems in detecting and estimating the area for wildfires [Formula presented]	2021	1,68	8,1	1,202	1	0,43	North Carolina A&T State University Izmir Institute of Technology	2	United States Turkey	Computer Science Applications Software Control and Systems Engineering General Mathematics	-	Nonholonomic, Formation Control, Robot
Machine learning based wildfire susceptibility mapping using remotely sensed fire data and GIS: A case study of Adana and Mersin provinces, Turkey	2022	-	-	-	1	2,21	Igdir University Mersin University	2	Turkey	Ecology, Evolution, Behavior and Systematics Computational Theory and Mathematics Computer Science Applications Ecological Modeling Ecology Applied Mathematics Modeling and Simulation	-	Wildfires, Fire Weather, Occurrences
'Back to the Future'—Oak wood-pasture for wildfire prevention in the Mediterranean	2021	0,88	2,7	0,411	1	0,48	University of Rome La Sapienza University of Porto University of Palermo University of Göttingen Karabuk University Aristotle University of Thessaloniki University of the Basque Country National Agricultural Research Foundation	8	Spain Germany Turkey Portugal Greece Italy	Ecology, Evolution, Behavior and Systematics Forestry Plant Science Ecology	SDG 11 SDG 12 SDG 13 SDG 15	Wildfires, Fire Weather, Occurrences
Mapping Wildfires Using Sentinel 2 MSI and Landsat 8 Imagery: Spatial Data	2021	0,39	1	0,162	0	0	Kahramanmaraş Sutcu Imam University Karadeniz Technical University Oregon State University	3	United States Turkey	Forestry Engineering (miscellaneous)	SDG 15	Biomass Burning, Remote Sensing, Wildfires

Generation for Forestry												
A LabVIEW-based fire monitoring software using multi-criteria AHP approach for detecting geolocation of wildfire	2021	1,19	4,9	0,7	0	0	Istanbul Technical University	1	Turkey	Earth and Planetary Sciences (miscellaneous) Atmospheric Science Water Science and Technology	SDG 15	Biomass Burning,Remote Sensing,Wildfires
Multi-century spatiotemporal patterns of fire history in black pine forests, Turkey	2022	-	-	-	0	0	Istanbul University Cerrahpaşa Istanbul Technical University Hacettepe University University of Arizona	4	United States Turkey	Forestry Management, Monitoring, Policy and Law Nature and Landscape Conservation	SDG 13 SDG 15	Fuel Treatment,Clima e Change,Fire Severity
Stubble burning and wildfires in Turkey considering the Sustainable Development Goals of the United Nations	2022	-	-	-	0	0	Bozok University Kahramanmaraş Sutcu Imam University University of Valencia University of Granada	4	Spain Turkey	Agronomy and Crop Science Plant Science Soil Science Environmental Science (miscellaneous)	SDG 8 SDG 12 SDG 15	Wildfires,Fire Weather,Occurre nces
BLSTM based night-time wildfire detection from video	2022	-	-	-	0	0	Abdullah Gul University	1	Turkey	Multidisciplinari y	-	Fire Detection,Wildfire s,Smoke
Predicting the potential impact of forest fires on runoff and sediment loads using a distributed hydrological modeling approach	2022	-	-	-	0	0	Istanbul University Cerrahpaşa	1	Turkey	Ecological Modeling Ecology	SDG 15	Water Repellent Soils,Soil,Wildfires
Analysis of correlated circular and extremal data with a flexible cylindrical distribution	2022	-	-	-	0	0	Middle East Technical University	1	Turkey	Statistics, Probability and Uncertainty General Environmental Science Statistics and Probability	-	Circular Data,Regression Model,Normalizin g Constant
Assessing the performance of MODIS and VIIRS active fire products in the monitoring of wildfires: a case study in Turkey	2022	-	-	-	0	0	Karadeniz Technical University	1	Turkey	Forestry Ecology Nature and Landscape Conservation	-	Biomass Burning,Remote Sensing,Wildfires
Assessment of Endemic Lycian Salamanders Habitats Impacted by 2021 Mega Forest Fires in Turkey	2022	-	-	-	0	0	Çankırı Karatekin University Adnan Menderes University Ege University	3	Turkey	Ecology, Evolution, Behavior and Systematics Ecology Nature and Landscape Conservation	SDG 12 SDG 15	Hynobiidae,Urode la,Salamandridae

8.3 Yapay Zekada Etik

Dünya'da 2020-2022 yıllarında AI Ethics alanında yapılmış en çok atıf alan 50 makale listesi aşağıdaki gibidir;

Tablo 20 Dünya'da 2020-2022 Yıllarında AI Ethics Alanında Yapılmış En Çok Atıf Alan 50 Makale Listesi

Title	Year	SNIP (publ icati on year)	CiteS core (publ icati on year)	SJR (publ icati on year)	Citat ions	Field - Weig hted Citat ion Impa ct	Institutions	Num ber of Instit utio ns	Country/ Region	All Science Journal Classification (ASJC) field name	Sustain able Develo pment Goals (2022)	Topic name
How artificial intelligence will change the future of marketing	2020	4,83	17	5,512	341	45,43	University of South Carolina Maastricht University Babson College	3	United States Netherlands	Business and International Management Marketing Economics and Econometrics	-	Human-Robot Interaction, Robots, Artificial Intelligence
The Ethics of AI Ethics: An Evaluation of Guidelines	2020	2,01	4,4	0,806	222	98,65	University of Tübingen	1	Germany	Philosophy Artificial Intelligence	-	Machine Ethics, Artificial Intelligence, Roboethics
From What to How: An Initial Review of Publicly Available AI Ethics Tools, Methods and Research to Translate Principles into Practices	2020	1,79	5	0,73	108	22,43	Alan Turing Institute Digital Catapult University of Oxford The British Library	4	United Kingdom	Management of Technology and Innovation Health Policy Issues, Ethics and Legal Aspects Health (social science)	-	Machine Ethics, Artificial Intelligence, Roboethics
Artificial Intelligence in Dentistry: Chances and Challenges	2020	2,01	9,9	1,979	99	24,17	Charité – Universitätsmedizin Berlin Fraunhofer Institute for Telecommunications, Heinrich Hertz Institute	2	Germany	General Dentistry	SDG 4	Concordance, Clinical Decision Support, Artificial Intelligence
Explainability for artificial intelligence in healthcare: a multidisciplinary perspective	2020	1,44	3,9	0,777	92	14,31	Birmingham City University Charité – Universitätsmedizin Berlin Swiss Federal Institute of Technology Zurich	3	United Kingdom Germany Switzerland	Health Informatics Health Policy	-	Concordance, Clinical Decision Support, Artificial Intelligence
Rulers of the world, unite! The challenges and opportunities of artificial intelligence	2020	2,88	11,3	2,174	88	10,01	ESCP Business School	1	Germany France	Business and International Management Marketing	-	Elliptic Curve, Research Agenda, Artificial Intelligence
Decolonial AI: Decolonial Theory as Sociotechnical Foresight in Artificial Intelligence	2020	2,74	6,3	0,94	73	42,15	University of Oxford Alphabet Inc.	2	United Kingdom	History and Philosophy of Science Philosophy	-	Fairness, Discrimination (Psychology), Transfer Of Learning

From data to action: How marketers can leverage AI	2020	2,88	11,3	2,17 4	61	7,1	Swinburne University of Technology EADA Business School University of San Diego National Chung Hsing University	4	Taiwan Spain United States Australia	Business and International Management Marketing	-	Elliptic Curve,Research Agenda,Artificial Intelligence
How to Design AI for Social Good: Seven Essential Factors	2020	1,79	5	0,73	61	12,6 7	Alan Turing Institute University of Oxford	2	United Kingdom	Management of Technology and Innovation Health Policy Issues, Ethics and Legal Aspects Health (social science)	-	Machine Ethics,Artificial Intelligence,Roboethics
Bridging the gap between ethics and practice: Guidelines for reliable, safe, and trustworthy human-centered AI systems	2020	1,58	4,7	0,38 1	59	6,33	University of Maryland, College Park	1	United States	Artificial Intelligence Human-Computer Interaction	-	User Studies,Transfer Of Learning,Transparency
The Chinese approach to artificial intelligence: an analysis of policy, ethics, and regulation	2021	1,29	3,9	0,59	58	43,3 4	Alan Turing Institute University of Oxford The British Library	3	United Kingdom	Philosophy Artificial Intelligence Human-Computer Interaction	SDG 8	Cadres,China,Central Committee
Telepsychiatry and other cutting-edge technologies in COVID-19 pandemic: Bridging the distance in mental health assistance	2021	0,94	1,9	0,64 6	50	24,6 7	University of Hertfordshire Magna Græcia University Gabriele d'Annunzio University	3	United Kingdom Italy	General Medicine	-	Video Conferencing,COVID-19,E-Health
The ethical, legal and social implications of using artificial intelligence systems in breast cancer care	2020	1,48	7	1,56 3	47	7,85	University of Sydney Macquarie University University of Adelaide University of Wollongong	4	Australia	Cancer Research Oncology Surgery	SDG 3	Concordance,Clinical Decision Support,Artificial Intelligence
Artificial Intelligence Crime: An Interdisciplinary Analysis of Foreseeable Threats and Solutions	2020	1,79	5	0,73	44	8,72	Alan Turing Institute University of Oxford	2	United Kingdom	Management of Technology and Innovation Health Policy Issues, Ethics and Legal Aspects Health (social science)	-	Machine Ethics,Artificial Intelligence,Roboethics
The Ethical Implications of Using Artificial Intelligence in Auditing	2020	2,37	9	2,20 9	43	10,9 3	Rutgers - The State University of New Jersey, Newark	1	United States	Arts and Humanities (miscellaneous) General Business,Management and Accounting Business and International Management Economics and Econometrics Law	-	Professional Skepticism,Auditors,Fraud

Protocol for development of a reporting guideline (TRIPOD-AI) and risk of bias tool (PROBAST-AI) for diagnostic and prognostic prediction model studies based on artificial intelligence	2021	1,29	3,9	0,982	41	20,23	Leiden University Harvard University Keele University University of Oxford Oxford University Hospitals NHS Foundation Trust Alphabet Inc. Utrecht University KU Leuven	8	Belgium United Kingdom United States Netherlands	General Medicine	-	Nomograms,Receiver Operating Characteristic,Prediction Model
Ethics of using and sharing clinical imaging data for artificial intelligence: A proposed framework	2020	2,91	17,7	3,118	41	5,9	Stanford University	1	United States	Radiology, Nuclear Medicine and Imaging	-	Radiography,Pneumot horax,Artificial Intelligence
Who is afraid of black box algorithms? On the epistemological and ethical basis of trust in medical AI	2021	1,56	4,7	0,88	41	20,6	Utrecht University Delft University of Technology	2	Netherlands	Arts and Humanities (miscellaneous) Health Policy Issues, Ethics and Legal Aspects Health (social science)	-	Concordance,Clinical Decision Support,Artificial Intelligence
Artificial intelligence in business: State of the art and future research agenda	2021	3,09	11,2	2,316	40	7,48	University Institute of Lisbon University of Surrey	2	United Kingdom Portugal	Marketing	-	Elliptic Curve,Research Agenda,Artificial Intelligence
In AI We Trust: Ethics, Artificial Intelligence, and Reliability	2020	1,79	5	0,73	33	6,85	KTH Royal Institute of Technology	1	Sweden	Management of Technology and Innovation Health Policy Issues, Ethics and Legal Aspects Health (social science)	-	Machine Ethics,Artificial Intelligence,Roboethics
Your evidence? Machine learning algorithms for medical diagnosis and prediction	2020	1,41	8,4	2,005	33	5,84	Jülich Research Centre University of Bonn Heinrich Heine University Düsseldorf	3	Germany	Anatomy Neurology (clinical) Radiology, Nuclear Medicine and Imaging Neurology Radiological and Ultrasound Technology	-	Alzheimer's Disease,Poly(Divinyl-Co-N-Vinylpyrrolidinone),Cognitive Dysfunction
Lessons Learned About Autonomous AI: Finding a Safe, Efficacious, and Ethical Path Through the Development Process	2020	2,16	7,1	2,704	33	9,01	Stanford University University of Iowa	2	United States	Ophthalmology	SDG 3	Concordance,Clinical Decision Support,Artificial Intelligence
AI ethics should not remain toothless! A call to bring back the teeth of ethics	2020	2,92	8,1	2,244	32	5,66	Trilateral Research Ltd.	1	United Kingdom Ireland	Computer Science Applications Information Systems Information Systems and Management	-	Machine Ethics,Artificial Intelligence,Roboethics

										Library and Information Sciences Communication		
How artificial intelligence will affect the future of retailing	2021	2,6	8,2	2,51 1	29	5,43	Drexel University Babson College Dartmouth College Wal-Mart Stores University of Arkansas System	5	United Kingdom United States France	Marketing	-	Reverse Supply Chain, Automation, Business Model
Artificial intelligence ethics guidelines for developers and users: clarifying their content and normative implications	2021	0,59	2,3	0,35 5	28	22,3 3	De Montfort University KTH Royal Institute of Technology	2	United Kingdom Sweden	Philosophy Computer Networks and Communications Sociology and Political Science Communication	-	Interpretive Research, Artificial Intelligence, Hermeneutics
Embedding Values in Artificial Intelligence (AI) Systems	2020	2,01	4,4	0,80 6	27	12	Delft University of Technology	1	Netherlands	Philosophy Artificial Intelligence	-	Machine Ethics, Artificial Intelligence, Roboethics
Evaluating eligibility criteria of oncology trials using real-world data and AI	2021	11,3 4	70,2	17,8 97	27	6,63	Chan Zuckerberg Biohub Stanford University Genentech Incorporated	3	United States	Multidisciplinary	SDG 3	Nivolumab, Pembrolizumab, Immunotherapy
Autonomous Vehicles and Avoiding the Trolley (Dilemma): Vehicle Perception, Classification, and the Challenges of Framing Decision Ethics	2020	1,1	3	0,32 2	27	3,12	University of Limerick	1	Ireland	Artificial Intelligence Information Systems Software	-	Intelligent Vehicle Highway Systems, Traffic Behavior, Automated Vehicle
Stand-alone artificial intelligence - The future of breast cancer screening?	2020	1,48	7	1,56 3	26	4,34	Netherlands Cancer Institute Radboud University Nijmegen	2	Netherlands	Cancer Research Oncology Surgery	SDG 3	Computer Aided Diagnosis, Breast Imaging, Deep Learning
Artificial intelligence in sleep medicine: Background and implications for clinicians	2020	1,66	5,7	1,52 9	26	3,62	University of Florida Harvard University Vanderbilt University University of Pittsburgh University of Michigan, Ann Arbor New York University	6	United States	Neurology (clinical) Pulmonary and Respiratory Medicine Neurology	-	Big Data, Neurosciences, Medical Image Analysis
AI in medicine must be explainable	2021	12,1 7	91,9	24,1 61	26	5,34	Johns Hopkins University	1	United States	General Biochemistry, Genetics and Molecular Biology	-	-
Primer on an ethics of AI-based decision support systems in the clinic	2021	1,56	4,7	0,88	24	12,0 6	Leibniz University Hannover Friedrich-Alexander University Erlangen-Nürnberg	2	Germany	Arts and Humanities (miscellaneous) Health Policy Issues, Ethics and Legal Aspects Health (social science)	-	Concordance, Clinical Decision Support, Artificial Intelligence
Artificial intelligence for human flourishing – Beyond	2021	3,09	11,2	2,31 6	24	4,49	De Montfort University University of Central Lancashire, Cyprus University of	6	United Kingdom Finland	Marketing	SDG 16	Science Fiction, Human Enhancement, Posthuman

principles for machine learning							Central Lancashire Wageningen University & Research Trilateral Research Ltd. University of Twente		Netherlands Cyprus			
Towards Transparency by Design for Artificial Intelligence	2020	1,79	5	0,73	24	4,98	Leiden University BI Norwegian Business School National University of Ireland, Galway University of St. Gallen	4	Norway Ireland Switzerland Netherlands	Management of Technology and Innovation Health Policy Issues, Ethics and Legal Aspects Health (social science)	SDG 16	Philosophy of Information,Information on Ethics,Artificial Intelligence
Ethics of AI in Education: Towards a Community-Wide Framework	2021	2,72	7,3	0,971	23	11,67	University College London National Distance Education University Ateneo de Manila University Carnegie Mellon University Universidade Federal de Alagoas University of Technology Sydney	6	United Kingdom Spain United States Philippines Australia Brazil	Computational Theory and Mathematics Education	-	Moodle,Learning Management System,Dashboards
Anthropomorphism in AI	2020	0,92	8,2	0,409	23	3,16	Uppsala University	1	Italy Argentina Sweden	General Neuroscience	-	Human-Robot Interaction,Humanoid Robot,Man-Machine Systems
Designing for human rights in AI	2020	2,92	8,1	2,244	23	4,07	Delft University of Technology	1	Netherlands	Computer Science Applications Information Systems Information Systems and Management Library and Information Sciences Communication	SDG 16	Nanoethics,Artificial Intelligence,Innovation Process
Artificial Intelligence as a Socratic Assistant for Moral Enhancement	2020	1,15	3,8	0,529	23	3,65	Newcastle University University of Granada	2	United Kingdom Spain	Health Policy Psychiatry and Mental Health Neurology	-	Machine Ethics,Artificial Intelligence,Roboethics
AI in the headlines: the portrayal of the ethical issues of artificial intelligence in the media	2020	1,13	2,3	0,343	22	7,33	North Carolina State University	1	United States	Philosophy Artificial Intelligence Human-Computer Interaction	-	Machine Ethics,Artificial Intelligence,Roboethics
Trust, transparency, and openness: How inclusion of cultural values shapes Nordic national public policy strategies for artificial intelligence (AI)	2020	1,63	4,2	0,819	22	4,46	Linköping University	1	Sweden	Business and International Management Education Human Factors and Ergonomics Sociology and Political Science	SDG 8 SDG 16	Journalism,News,Social Media
Ethical issues in service robotics and artificial intelligence	2021	1,95	10,8	1,796	21	5,21	York University Toronto	1	Canada	Management of Technology and Innovation Strategy and Management	-	Machine Ethics,Artificial Intelligence,Roboethics

The most human bot: Female gendering increases humanness perceptions of bots and acceptance of AI	2021	1,49	4,9	1,2	21	5,35	École Supérieure de Commerce de Toulouse University of Agder CNRS Université Fédérale Toulouse Midi-Pyrénées Université Toulouse 1 Capitole	5	Norway France Sweden	Marketing Applied Psychology	SDG 5	Human-Robot Interaction,Humanoid Robot,Man-Machine Systems
Artificial intelligence in radiology-ethical considerations	2020	1,13	1,4	0,62 2	21	3,49	University College Cork University of Pisa	2	Austria Ireland Italy	Clinical Biochemistry	-	Radiography,Pneumot horax,Artificial Intelligence
Expectations of artificial intelligence and the performativity of ethics: Implications for communication governance	2020	2,92	8,1	2,24 4	20	3,54	Technological University Dublin ADAPT Maynooth University University College Dublin	4	Ireland	Computer Science Applications Information Systems Information Systems and Management Library and Information Sciences Communication	-	Nanoethics,Artificial Intelligence,Innovation Process
Four Responsibility Gaps with Artificial Intelligence: Why they Matter and How to Address them	2021	3,36	6,4	1,45	20	24,7 2	Radboud University Nijmegen Delft University of Technology	2	Netherlands	History and Philosophy of Science Philosophy	SDG 16	Machine Ethics,Artificial Intelligence,Roboethics
Social choice ethics in artificial intelligence	2020	1,13	2,3	0,34 3	20	6,33	-	0	United States	Philosophy Artificial Intelligence Human-Computer Interaction	-	Mind Uploading,Existential Risk,Artificial Intelligence
The disruptive power of Artificial Intelligence. Ethical aspects of gerontechnology in elderly care	2020	1,28	4,3	0,98 5	20	3,39	Heidelberg University	1	Germany	Aging Geriatrics and Gerontology Gerontology Health (social science)	-	Human-Robot Interaction,Humanoid Robot,Man-Machine Systems
AI and the path to envelopment: knowledge as a first step towards the responsible regulation and use of AI-powered machines	2020	1,13	2,3	0,34 3	19	5,99	Delft University of Technology	1	Netherlands	Philosophy Artificial Intelligence Human-Computer Interaction	-	Machine Ethics,Artificial Intelligence,Roboethics
Regulating artificial intelligence and robotics: ethics by design in a digital society	2021	1,32	4,7	0,38 4	19	30,8	-	0	United States	History General Social Sciences	-	Human-Robot Interaction,Humanoid Robot,Man-Machine Systems
Artificial intelligence for good health: a scoping review of the ethics literature	2021	1,52	3,5	0,83 2	18	8,96	University of Toronto	1	Canada	Health Policy Issues, Ethics and Legal Aspects Health (social science)	SDG 9 SDG 10	Human-Robot Interaction,Humanoid Robot,Man-Machine Systems

Türkiye'de 2020-2022 yıllarında AI Ethics alanında yapılmış en çok atıf alan makalelerin listesi aşağıdaki gibidir;

Tablo 21 Türkiye'de 2020-2022 Yıllarında AI Ethics Alanında Yapılmış En Çok Atıf Alan Makalelerin Listesi

Title	Year	SNIP (publicati on year)	CiteS core (publ icati on year)	SJR (publ icati on year)	Citat ions	Field- Weighted Citation Impact	Institutions	Num ber of Instit utio ns	Country/ Region	All Science Journal Classification (ASJC) field name	Sustaina ble Develop ment Goals (2022)	Topic name
Artificial intelligence and reflections from educational landscape: A review of AI studies in half a century	2021	1,31	5	0,66 4	14	4,28	Anadolu University Open University of Catalonia University of South Africa	3	Spain South Africa Turkey	Energy Engineering and Power Technology Renewable Energy, Sustainability and the Environment Environmental Science (miscellaneous) Management, Monitoring, Policy and Law Geography, Planning and Development	-	Computer-Aided Instruction,Tutor,Computer-Based Learning
An international survey on AI in radiology in 1041 radiologists and radiology residents part 2: expectations, hurdles to implementation, and education	2021	2,16	9,4	1,73	6	2,71	Hôpital Saint-Joseph University of Cologne University of Texas Southwestern Medical Center Charles University ETZ Elisabeth - Tweesteden Ziekenhuis Stanford University University of British Columbia University of Bologna Utrecht University KU Leuven	10	Belgium United States Germany Turkey Italy France Netherlands Russian Federation Czech Republic Canada	Radiology, Nuclear Medicine and Imaging	-	Radiography,Pneumothorax,Artificial Intelligence
Medical artificial intelligence readiness scale for medical students (MAIRS-MS) – development, validity and reliability study	2021	1,81	3,7	0,74 4	5	3,21	Dokuz Eylül University Ege University	2	Turkey	Education	SDG 3	Measurement Invariance,Confirmatory Factor Analysis,Factor Analysis
A critical perspective on guidelines for responsible and trustworthy artificial intelligence	2020	1,15	3	0,51 7	4	0,88	TOBB University of Economics and Technology Ankara University	2	Turkey	Health Policy Education Health (social science)	-	Concordance,Clinical Decision Support,Artificial Intelligence
Artificial intelligence in medical education	2022	-	-	-	0	0	Izmir Democracy University Ege University	2	Turkey	Multidisciplinary	-	Delphi Method,Education,Foresight

curriculum: An e-Delphi study for competencies												
Use of AI to Help Researchers Improve their Research Funding Capacities, Relevance, and Performance	2022	-	-	-	0	0	RWTH Aachen University Scientific and Technological Research Council of Turkey	2	Ireland Germany Turkey	Artificial Intelligence Computer Networks and Communications Computer Science Applications Information Systems Software Linguistics and Language	-	Object Detection, Deep Learning, IOU

Referanslar

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