

# A Metaverse: Taxonomy, Components, Applications, and

IEEE Access

10, 4209-4251

DOI: [10.1109/access.2021.3140175](https://doi.org/10.1109/access.2021.3140175)

Citation Report

#	ARTICLE	IF	CITATIONS
1	Virtual Reality Aided Therapy towards Health 4.0: A Two-Decade Bibliometric Analysis. International Journal of Environmental Research and Public Health, 2022, 19, 1525.	1.2	52
2	Towards Double Defense Network Security Based on Multi-Identifier Network Architecture. Sensors, 2022, 22, 747.	2.1	3
3	Working in the Metaverse: Does Telework in a Metaverse Office Have the Potential to Reduce Population Pressure in Megacities? Evidence from Young Adults in Seoul, South Korea. Sustainability, 2022, 14, 3629.	1.6	34
4	Metaverse-Empowered Music and Dance: Experience of Emotion and Scene Unification. Mobile Information Systems, 2022, 2022, 1-9.	0.4	0
5	The Influence of Music Content Marketing on User Satisfaction and Intention to Use in the Metaverse: A Focus on the SPICE Model. Businesses, 2022, 2, 141-155.	0.8	30
6	The Impact of Basic Programming Interactive E-Module Implementation on Students' Learning Outcomes in Distance Learning. SinkrOn, 2022, 7, 351-358.	0.2	0
7	Digital Self: The Next Evolution of the Digital Human. Computer, 2022, 55, 82-86.	1.2	5
8	A Survey on Artificial Intelligence Aided Internet-of-Things Technologies in Emerging Smart Libraries. Sensors, 2022, 22, 2991.	2.1	24
9	How did you feel during the navigation? Influence of emotions on browsing time and interaction frequency in immersive virtual environments. Behaviour and Information Technology, 2023, 42, 1216-1229.	2.5	6
10	Overview of Prospects for Service-Aware Radio Access towards 6G Networks. Electronics (Switzerland), 2022, 11, 1262.	1.8	15
11	Multimedia Research Toward the Metaverse. IEEE MultiMedia, 2022, 29, 125-127.	1.5	16
12	UTAUT in Metaverse: An 'Erfand' Case. Journal of Theoretical and Applied Electronic Commerce Research, 2022, 17, 613-635.	3.1	50
13	Metaverse Ecosystem and Technologies in the Future of Healthcare: Applications, Opportunities, and Challenges. Eurasian Journal of Health Technology Assessment, 2022, 6, 12-34.	0.2	8
14	METAVVERSE AND MANUFACTURING: THE IMPACT OF METAVVERSE ON THE MANUFACTURE. Erciyes Akademi, 2022, 36, 559-573.	0.1	4
15	Definition, roles, and potential research issues of the metaverse in education: An artificial intelligence perspective. Computers and Education Artificial Intelligence, 2022, 3, 100082.	6.9	190
16	A first bibliometric literature review on Metaverse. , 2022, , .		33
17	The Novel Approach of QR Code detection with Smart Glasses. , 2022, , .		3
18	Smart Factory Using Virtual Reality and Online Multi-User: Towards a Metaverse for Experimental Frameworks. Applied Sciences (Switzerland), 2022, 12, 6258.	1.3	50

#	ARTICLE	IF	CITATIONS
19	A Global Fundamental Matrix Estimation Method of Planar Motion Based on Inlier Updating. <i>Sensors</i> , 2022, 22, 4624.	2.1	3
20	Quantum Collective Learning and Many-to-Many Matching Game in the Metaverse for Connected and Autonomous Vehicles. <i>IEEE Transactions on Vehicular Technology</i> , 2022, 71, 12128-12139.	3.9	16
21	A Decision Support System for Assessing and Prioritizing Sustainable Urban Transportation in Metaverse. <i>IEEE Transactions on Fuzzy Systems</i> , 2023, 31, 475-484.	6.5	53
22	Strategy for improving the football teaching quality by AI and metaverse-empowered in mobile internet environment. <i>Wireless Networks</i> , 0, , .	2.0	25
23	Antenna Systems in Medical Masks: Applications for 5G FR1 and Wi-Fi 7 Wireless Systems. <i>Electronics (Switzerland)</i> , 2022, 11, 1983.	1.8	0
24	An Análisis informático del metaverso en canales y vídeos hispanoparlantes de YouTube. <i>Podium</i> , 2022, , 141-156.	0.4	2
25	Is Metaverse in education a blessing or a curse: a combined content and bibliometric analysis. <i>Smart Learning Environments</i> , 2022, 9, .	4.3	204
26	METAVERSİNİN EĞİTİMDEKİ YERİ VE KULLANIM ALANLARI: BİR LİTERATÜR İNCELEMESİ. <i>Uluslararası Egzersiz Psikolojisi Dergisi</i> , 2022, 4, 18-29.	0.2	7
27	Looking for haptics. Touch digitalization business strategies in luxury and fashion during COVID-19 and beyond. <i>Digital Business</i> , 2022, 2, 100035.	2.3	5
28	Understanding Green Consumption: A Literature Review Based on Factor Analysis and Bibliometric Method. <i>Sustainability</i> , 2022, 14, 8324.	1.6	11
29	Some Very Simple Economics of Web3 and the Metaverse. , 2022, 1, 225-234.		29
30	Optimal policy computing for blockchain based smart contracts via federated learning. <i>Operational Research</i> , 2022, 22, 5817-5844.	1.3	4
31	Emerging Immersive Communication Systems: Overview, Taxonomy, and Good Practices for QoE Assessment. <i>Frontiers in Signal Processing</i> , 0, 2, .	1.2	8
32	Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. <i>International Journal of Information Management</i> , 2022, 66, 102542.	10.5	702
33	A Cross-Chain Protocol based on Quantum Teleportation for Underlying Architecture of Metaverse. , 2022, , .		4
34	Enhancement of Meta Verse Capabilities by IoT Integration. , 2022, , .		42
35	Using Software-Defined Radio Learning Modules for Communication Systems. , 2022, , .		0
36	ICDVAE: An Effective Self-supervised Reinforcement Learning Method for behavior decisions of Non-player Characters in Metaverse Games. , 2022, , .		2

#	ARTICLE	IF	CITATIONS
37	Toward Evacuation Training in Metaverse. Advances in Educational Technologies and Instructional Design Book Series, 2022, , 97-124.	0.2	0
38	The University in the Metaverse. Proposal of application scenarios and roadmap model. , 2022, , .		1
39	Contribution of Blockchain in Development of Metaverse. , 2022, , .		12
40	Turning the Page. Advances in Marketing, Customer Relationship Management, and E-services Book Series, 2022, , 200-207.	0.7	1
41	Investigation of "Metaverse" Platforms in the Context of Marketing Mix Decision Making Using Multi-Criteria Decision Making Methods. Gaziantep University Journal of Social Sciences, 2022, 21, 1494-1511.	0.1	1
42	METAVVERSE: Å–RGÅœT KÅœLTÅœNÅœN GELENEKSELDEN DÅ°JÅ°TALE EVRÅ°MÅ°. Uluslararası Å°ktisadi Ve Å°dari Å°ncelemler Dergisi, 2022, , 21-36.	0.3	3
43	Anti-aliasing convolution neural network of finger vein recognition for virtual reality (VR) humanâ€“robot equipment of metaverse. Journal of Supercomputing, 2023, 79, 2767-2782.	2.4	11
44	Robust triboelectric informationâ€“mat enhanced by multiâ€“modality deep learning for smart home. InformaÅnA-MateriÅjly, 2023, 5, .	8.5	33
45	Embracing falsity through the metaverse: The case of synthetic customer experiences. Business Horizons, 2022, 65, 739-749.	3.4	70
46	Future era of techno-economic analysis: Insights from review. Frontiers in Sustainability, 0, 3, .	1.3	13
47	Metaverse: How to Approach Its Challenges from a BISE Perspective. Business and Information Systems Engineering, 2022, 64, 401-406.	4.0	11
48	Metaverse-driven new energy of Chinese traditional culture education: edge computing method. Evolutionary Intelligence, 2023, 16, 1503-1511.	2.3	5
49	Prospects and challenges of Metaverse application in dataâ€“driven intelligent transportation systems. IET Intelligent Transport Systems, 2023, 17, 1-21.	1.7	68
50	AI Based Metaverse Technologies Advancement Impact on Higher Education Learners. WSEAS Transactions on Systems, 2022, 21, 178-184.	0.2	4
51	Design of Secure Mutual Authentication Scheme for Metaverse Environments Using Blockchain. IEEE Access, 2022, 10, 98944-98958.	2.6	46
52	Fed-MT-ISAC: Federated Multi-task Inverse Soft Actor-Critic for Human-Like NPCs in the Metaverse Games. Lecture Notes in Computer Science, 2022, , 492-503.	1.0	2
53	Non-fungible tokens: Use cases of NFTs and future research agenda. Risk Governance & Control: Financial Markets & Institutions, 2022, 12, 8-18.	0.2	5
54	The Road to Industry 4.0 and Beyond: A Communications-, Information-, and Operation Technology Collaboration Perspective. IEEE Network, 2022, 36, 157-164.	4.9	7

#	ARTICLE	IF	CITATIONS
55	Metaverse: A Digital Network Valuation. , 2022, , 515-559.		2
56	Will Metaverse Be NextG Internet? Vision, Hype, and Reality. IEEE Network, 2022, 36, 197-204.	4.9	93
57	[Invited Paper] 3D Display and Interactive Technology in Metaverse. ITE Transactions on Media Technology and Applications, 2022, 10, 179-189.	0.3	0
58	NFTs in Healthcare: Vision, Opportunities, and Challenges. IEEE Consumer Electronics Magazine, 2023, 12, 21-32.	2.3	11
59	A Survey on Metaverse: Fundamentals, Security, and Privacy. IEEE Communications Surveys and Tutorials, 2023, 25, 319-352.	24.8	283
60	Blockchain-Empowered Service Management for the Decentralized Metaverse of Things. IEEE Access, 2022, 10, 99025-99037.	2.6	18
61	Evaluation of Metaverse in the Digital Transformation Process within the Framework of Jean Baudrillard's Simulation Theory. Afyon Kocatepe Üniversitesi Sosyal Bilimler Dergisi, 2022, 24, 1156-1175.	0.5	1
62	Metaverse Applications in Business. Advances in Marketing, Customer Relationship Management, and E-services Book Series, 2022, , 110-136.	0.7	5
63	Metaverse. Advances in Human and Social Aspects of Technology Book Series, 2022, , 315-330.	0.3	2
64	Fuzzy Ontology-based Intelligent Agent for High-School Student Learning in AI-FML Metaverse. , 2022, , .		4
65	Fairness-Oriented Edge Allocation for Interactive Group Gaming in Edge Computing. , 2022, , .		0
66	A Study on Analyzing Teachers' Perception and Needs of Using Metaverse in Elementary Online Learning Environment. Journal of Digital Contents Society, 2022, 23, 1383-1397.	0.1	3
67	Metaverse Learning: The Relationship among Quality of VR-Based Education, Self-Determination, and Learner Satisfaction. , 2022, , .		10
68	A Review of Research on Metaverse Defining Taxonomy and Adaptive Architecture. , 2022, , .		7
69	Quality of Experience in the Metaverse: An Initial Analysis on Quality Dimensions and Assessment. , 2022, , .		5
70	The smart body concept as a demonstration of the overarching utility and benefits of 3D avatars in retail, health and wellbeing: an accuracy study of body measures from 3D reconstruction. Multimedia Tools and Applications, 2023, 82, 11079-11098.	2.6	4
71	Metaverse ve Pazarlamaya Etkileri. İnsan Ve Toplum Bilimleri Araştırmaları Dergisi, 2022, 11, 1890-1909.	0.0	2
73	MetaOntology: Toward developing an ontology for the metaverse. Frontiers in Big Data, 0, 5, .	1.8	12

#	ARTICLE	IF	CITATIONS
74	Popularity of the metaverse: Embodied social presence theory perspective. <i>Frontiers in Psychology</i> , 0, 13, .	1.1	8
75	Can extended reality in the metaverse revolutionise health communication?. <i>Npj Digital Medicine</i> , 2022, 5, .	5.7	33
76	Industry 5.0: Prospect and retrospect. <i>Journal of Manufacturing Systems</i> , 2022, 65, 279-295.	7.6	235
77	Metaverse-based virtual reality experience and endurance performance in sports economy: Mediating role of mental health and performance anxiety. <i>Frontiers in Public Health</i> , 0, 10, .	1.3	13
78	Integrating Digital Twin and Advanced Intelligent Technologies to Realize the Metaverse. <i>IEEE Consumer Electronics Magazine</i> , 2023, 12, 47-55.	2.3	27
79	La convergencia de aprendizajes en el metaverso. <i>Revista Interamericana De Investigaci3n Educativa Y PedagogÅa RIIEP</i> , 2022, 15, 385-398.	0.1	1
80	A Study of a Metaverse Interdisciplinary Learning Community. , 2022, , .		5
81	Metaverse Fundamental Technologies for Smart City: A Literature Review. , 2022, , .		9
82	Metaverse for Developing Engineering Competency. , 2022, , .		2
83	The Essential Factor of Metaverse for Business Based on 7 Layers of Metaverse â€“ Systematic Literature Review. , 2022, , .		17
84	What do university students think about the metaverse?. <i>Journal of Educational Technology and Online Learning</i> , 2022, 5, 952-962.	0.6	6
85	The adoption of the metaverse concepts in Romania. <i>Management and Marketing</i> , 2022, 17, 328-340.	0.8	9
86	Exploring the application scenarios and issues facing Metaverse technology in education. <i>Interactive Learning Environments</i> , 0, , 1-13.	4.4	23
87	Metaverse through the prism of power and addiction: what will happen when the virtual world becomes more attractive than reality?. <i>European Journal of Futures Research</i> , 2022, 10, .	1.5	42
88	What Is Metaverse?â€”A Definition Based on Qualitative Meta-Synthesis. <i>Future Internet</i> , 2022, 14, 310.	2.4	42
89	Are we ready for metaverse?. , 2022, , .		19
90	The metaverse in education: Definition, framework, features, potential applications, challenges, and future research topics. <i>Frontiers in Psychology</i> , 0, 13, .	1.1	97
91	METaverse: BIBLIOMETRIC ANALYSIS, A CONCEPTUAL MODEL PROPOSAL, AND A MARKETING-ORIENTED APPROACH. <i>BingÅrÅl Åeniversitesi Sosyal Bilimler EnstitÅ¼sÅ¼ Dergisi</i> , 2022, , 383-394.	0.1	3

#	ARTICLE	IF	CITATIONS
92	Extensible Metaverse Implication for a Smart Tourism City. Sustainability, 2022, 14, 14027.	1.6	32
93	What are the benefits and opportunities of launching a Metaverse for NEOM city?. Security and Privacy, 2023, 6, .	1.9	1
94	The Effect of Self-Determination and Quality of VR-Based Education in the Metaverse on Learner Satisfaction. Studies in Computational Intelligence, 2023, , 41-54.	0.7	0
95	Enhancing wisdom manufacturing as industrial metaverse for industry and society 5.0. Journal of Intelligent Manufacturing, 2024, 35, 235-255.	4.4	24
96	Design and validation of a questionnaire for the evaluation of educational experiences in the metaverse in Spanish students (METAEDU). Heliyon, 2022, 8, e11364.	1.4	15
97	Digital forest recreation in the metaverse: Opportunities and challenges. Technological Forecasting and Social Change, 2022, 185, 122090.	6.2	25
98	Development and Transformation in Digital Marketing and Branding with Artificial Intelligence and Digital Technologies Dynamics in the Metaverse Universe. , 2023, 3, 9-18.		45
99	Ultra-Low Crosstalk En/Decoder Using an Amplitude-Shaping Technique for 100 Gbps O-CDM-PAM-4 Transmission in O-Band. IEEE Access, 2022, 10, 114414-114423.	2.6	0
100	The Metaverse and Beyond: Implementing Advanced Multiverse Realms With Smart Wearables. IEEE Access, 2022, 10, 110796-110806.	2.6	13
101	Healthcare in Metaverse: A Survey on Current Metaverse Applications in Healthcare. IEEE Access, 2022, 10, 119914-119946.	2.6	76
102	Tourism destination research from 2000 to 2020: A systematic narrative review in conjunction with bibliographic mapping analysis. Tourism Management, 2023, 95, 104686.	5.8	8
103	Human centric platforms for personalized value creation in metaverse. Journal of Manufacturing Systems, 2022, 65, 653-659.	7.6	51
104	Conceptualization of Meta-Servitization: 3D Case Study from Furniture Industry. , 2022, , .		3
105	Privacy Concerns and Measures in Metaverse: A Review. , 2022, , .		15
106	The Role of 5G Wireless Communication System in the Metaverse. , 2022, , .		13
107	Designing the Future? The Metaverse, NFTs, & the Future as Defined by Unity Users. Games and Culture, 2023, 18, 804-820.	1.7	12
108	Virtually (re)constructed reality: the representation of physical space in commercial location-based games. , 2022, , .		3
109	Development of metaverse for intelligent healthcare. Nature Machine Intelligence, 2022, 4, 922-929.	8.3	110

#	ARTICLE	IF	CITATIONS
110	The Perception of Smart Contracts for Governance of the Metaverse. , 2022, , .		4
111	BIMyVerse: Towards a Semantic Interpretation of Buildings in the City and Cities in the Universe. , 2022, , .		5
112	Artificial intelligence for the metaverse: A survey. Engineering Applications of Artificial Intelligence, 2023, 117, 105581.	4.3	164
113	Adoption of Metaverse in South East Asia. Advances in Web Technologies and Engineering Book Series, 2023, , 196-234.	0.4	7
114	A Review of Metaverseâ€™s Definitions, Architecture, Applications, Challenges, Issues, Solutions, and Future Trends. IEEE Access, 2022, 10, 125835-125866.	2.6	43
115	Engineering the Metaverse for Innovating the Electronic Business: A Socio-technological Perspective. Palgrave Studies in Cross-disciplinary Business Research, in Association With EuroMed Academy of Business, 2022, , 65-86.	1.0	2
116	Blockchain-Based Multisignature Lock for UAC in Metaverse. IEEE Transactions on Computational Social Systems, 2023, 10, 2201-2213.	3.2	10
117	A Delphi Study on Metaverse Campus Social Perspectives. Advances in Web Technologies and Engineering Book Series, 2023, , 144-165.	0.4	0
118	A Hybrid SEM-ANN Approach for Intention to Adopt Metaverse Using C-TAM-TPB and IDT in China. Advances in Web Technologies and Engineering Book Series, 2023, , 263-293.	0.4	4
119	The Role of Legal Governance Framework in the Metaverse World. Advances in Web Technologies and Engineering Book Series, 2023, , 321-330.	0.4	2
120	Metaverse or Not Metaverse. Advances in Web Technologies and Engineering Book Series, 2023, , 235-246.	0.4	1
121	Exploring the Incredible Potential and Opportunity of the Metaverse World. Advances in Web Technologies and Engineering Book Series, 2023, , 34-47.	0.4	1
122	Sharing Traffic Priorities via Cyberâ€™Physicalâ€™Social Intelligence: A Lane-Free Autonomous Intersection Management Method in Metaverse. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2023, 53, 2025-2036.	5.9	8
123	Metaverse in Healthcare: Applications, Challenges, and Future Directions. IEEE Consumer Electronics Magazine, 2023, 12, 33-46.	2.3	24
124	Towards Understanding Metaverse Engagement via Social Patterns and Reward Mechanism: A Case Study of <i>Nova Empire</i>. IEEE Transactions on Computational Social Systems, 2023, 10, 2165-2176.	3.2	4
125	Hyperverse: A High Throughput Pattern Matching Engine for Metaverse. , 2022, , .		1
126	Systematic Literature Review on The Usage of IoT in The Metaverse to Support The Education System. , 2022, , .		4
127	Travel with Wander in the Metaverse: An AI chatbot to Visit the Future Earth. , 2022, , .		6

#	ARTICLE	IF	CITATIONS
128	Corrigible Action Recognition System through Motion-Sphere Trajectories for Standard Metaverse Actions. , 2022, , .		0
129	REFLECTION OF VIRTUAL REALITY ON ACCOUNTING EDUCATION: TRANSFORMATION OF UNIVERSITY TO METAVERSTY. Dijital Cİşagıtıřda İslİşletmecilik Dergisi, 0, , .	0.0	1
130	The Internet of Senses: A Position Paper on the Challenges and Opportunities of Multisensory Immersive Experiences for the Metaverse. , 2022, , .		1
131	Perception Accuracy of a Multi-Channel Tactile Feedback System for Assistive Technology. Sensors, 2022, 22, 8962.	2.1	0
132	Metaverse Awareness of Turkish Generation Z Preservice Teachers. , 2022, 19, 838-852.		3
133	Speech Emotion Recognition Based on Parallel CNN-Attention Networks with Multi-Fold Data Augmentation. Electronics (Switzerland), 2022, 11, 3935.	1.8	12
134	Design and implementation of a metaverse platform for traditional culture: the chime bells of Marquis Yi of Zeng. Heritage Science, 2022, 10, .	1.0	8
135	Metaverse and education: the pioneering case of Minecraft in immersive digital learning. Profesional De La Informacion, 0, , .	2.7	6
136	Metaverso y educaci3n: una revisi3n panor3mica. , 0, 1, 2.		7
137	A Sustainable Fashion Industry Business Model Revolution Based on the Metaverse: Practices and Reciprocal Processes. , 0, 4, 363-369.		2
138	An analysis of the current status of metaverse research based on bibliometrics. Library Hi Tech, 2024, 42, 284-308.	3.7	15
139	Metaverse - Yeni Pazarlama Alanı. G4ncel Pazarlama Yaklařımları Ve Arařtırmaları Dergisi, 0, , .	0.0	0
140	Metaverse 3ezerine Kapsamlı Bir Arařtırma. European Journal of Science and Technology, 0, , .	0.5	2
141	Building the metaverse using digital twins at all scales,states, and relations. Virtual Reality & Intelligent Hardware, 2022, 4, 459-470.	1.8	31
142	Cybersecurity in the AI-Based Metaverse: A Survey. Applied Sciences (Switzerland), 2022, 12, 12993.	1.3	24
143	Caribbean Metaverse Development: A Literature Review Perspective. , 2022, 2, 83-99.		6
144	Exploring the metaverse in the digital economy: an overview and research framework. , 2022, 1, 206-224.		30
145	Effect of repetitive motion intervention on self-avatar on the sense of self-individuality. , 2022, , .		1

#	ARTICLE	IF	CITATIONS
146	Exploring the Potential Adoption of Metaverse in Government. Algorithms for Intelligent Systems, 2023, , 815-824.	0.5	0
147	Metaverse 'A'Şerikli Reklamlar'ın (Hyundai ve Nike Markalar'ın'ın Reklam Filmleri) G'ısterebilimsel Analiz Y'ntemi 'le 'ncelemesi. , 2022, 4, 102-117.		1
148	Utilizing the metaverse in anatomy and physiology. Anatomical Sciences Education, 2023, 16, 574-581.	2.5	9
149	Gaming the System: Playbour, Production, Promotion, and the Metaverse. Baltic Screen Media Review, 2022, 10, 224-233.	0.1	2
150	Using Cinematic Virtual Reality to Get Acquainted with the Metaverse. Baltic Screen Media Review, 2022, 10, 252-271.	0.1	0
151	Financial cybercrime in the Islamic Finance Metaverse. , 2022, 2, 56-61.		10
152	Faster and finer pose estimation for multiple instance objects in a single RGB image. Image and Vision Computing, 2023, 130, 104618.	2.7	6
153	MetaMining: Mining in the Metaverse. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2023, 53, 3858-3867.	5.9	11
154	Facing the challenges of metaverse: a systematic literature review from Social Sciences and Marketing and Communication. Profesional De La Informacion, 0, , .	2.7	5
155	When Internet of Things Meets Metaverse: Convergence of Physical and Cyber Worlds. IEEE Internet of Things Journal, 2023, 10, 4148-4173.	5.5	40
156	A Metaverse-Based Teaching Building Evacuation Training System With Deep Reinforcement Learning. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2023, 53, 2209-2219.	5.9	30
157	Educational Integration of the Metaverse Environment in the Context of Web 3.0 Technologies. Advances in Educational Technologies and Instructional Design Book Series, 2023, , 154-173.	0.2	2
158	Metaverse and Tourism: From a New Niche to a Transformation. Springer Proceedings in Business and Economics, 2023, , 300-311.	0.3	9
159	Metaverse: A Potential Virtual-Physical Ecosystem for Innovative Blended Education and Training. , 2023, 3, 66-72.		12
160	Islamic Compliant Frameworks for the Metaverse. Advances in E-Business Research Series, 2023, , 48-64.	0.2	0
161	Metaverse Applications as a Tool in Urban Policy Design. Advances in E-Business Research Series, 2023, , 12-34.	0.2	1
162	The Metaverse and Mathematics Education. Advances in Educational Technologies and Instructional Design Book Series, 2023, , 250-266.	0.2	1
163	Musical Metaverse: vision, opportunities, and challenges. Personal and Ubiquitous Computing, 2023, 27, 1811-1827.	1.9	12

#	ARTICLE	IF	CITATIONS
164	Physical and digital worlds: implications and opportunities of the metaverse. <i>Procedia Computer Science</i> , 2023, 217, 1744-1754.	1.2	10
165	Dijital Oyunların Geleceğinde Metaverse Etkisi. <i>Trt Akademi Dergisi</i> , 2023, 8, 294-317.	0.0	2
167	Analysis of Caribbean XR Survey Creates an XR Development Strategy as a Path to the Regional Metaverse Evolution. , 2023, 3, 43-65.		3
168	Effects of User Construction Behavior on User Experience in a Virtual Indoor Environment. , 2022, , .		2
169	Deep Learning Classification of Touch Gestures Using Distributed Normal and Shear Force. , 2022, , .		2
170	Exploration and Research on Digital Education Scenarios from the Perspective of Metaverse. , 2022, , .		1
171	Virtual Dimension – A Primer to Metaverse. <i>IT Professional</i> , 2022, 24, 27-33.	1.4	5
172	Avatar-Based Metaverse Interactions: A Taxonomy, Scenarios and Enabling Technologies. <i>Journal of Multimedia Information System</i> , 2022, 9, 293-298.	0.4	2
173	Metaverse Accounting. <i>İzmir Sosyal Bilimler Dergisi</i> ; 2022, 4, 97-105.	0.0	1
174	Resource Allocation and Resolution Control in the Metaverse with Mobile Augmented Reality. , 2022, , .		6
175	Visualization and Cybersecurity in the Metaverse: A Survey. <i>Journal of Imaging</i> , 2023, 9, 11.	1.7	16
176	Non-Fungible Tokens (NFT): A Systematic Review. <i>Information (Switzerland)</i> , 2023, 14, 26.	1.7	23
177	METAVVERSE: TECHNOLOGY OF THE FUTURE. <i>Prizren Social Science Journal</i> , 2022, 6, 55-63.	0.2	3
178	TAKING VIRTUAL REALITY AND AUGMENTED REALITY TO THE NEXT LEVEL: ARTIFICIAL INTELLIGENCE WITH MIXED REALITY. , 2023, 4, 141-165.		0
179	A trustless architecture of blockchain-enabled metaverse. <i>High-Confidence Computing</i> , 2023, 3, 100088.	2.2	9
180	Metaverse and Sustainability: Systematic Review of Scientific Publications until 2022 and Beyond. <i>Sustainability</i> , 2023, 15, 346.	1.6	35
181	Towards Metaverse with Diversified Applications: Service Native Architecture. , 0, 24, 31-39.		0
182	From Abstract to Concrete: How Immersive Virtual Reality Technology Enhances Teaching of Complex Paradigms. , 2022, , 135-152.		1

#	ARTICLE	IF	CITATIONS
183	Metaverse Security and Privacy: An Overview. , 2022, , .		36
184	Buying Virtual Fashion Items in the Metaverse : Focusing on Self-Regulatory Focus. Fashion & Textile Research Journal, 2022, 24, 707-718.	0.1	3
185	Defining the Metaverse: A Systematic Literature Review. IEEE Access, 2023, 11, 12368-12377.	2.6	37
186	A Second Life for Educators: A Hybrid Extended Reality Education Between Zuckerbergâ€™s Vision and Educational Researchersâ€™ Imaginary. , 2023, 3, 73-78.		4
187	Blockchain Integration in the Era of Industrial Metaverse. Applied Sciences (Switzerland), 2023, 13, 1353.	1.3	32
188	Metaverse for Healthcare: A Survey on Potential Applications, Challenges and Future Directions. IEEE Access, 2023, 11, 12765-12795.	2.6	104
189	Etkinlik Yönetimi Platformu Olarak Metaverse: Metaverse Tâ¼rkiye E-Dergisi Â–rneÄŸi. Trt Akademi Dergisi, 2023, 8, 122-143.	0.0	2
190	Perspective Chapter: The Metaverse for Education. , 0, , .		2
191	A bibliometric analysis of Metaverse research using VOSviewer. , 2023, , .		3
192	Does Metaverse a Technological Revolution in Artificial Intelligence? A Bibliometric Analysis. , 2022, , .		1
193	Motivation and Hurdles for the Student Adoption of Metaverse-based Classroom: A Qualitative Study. , 2022, , .		2
194	The growing metaverse sector can reduce greenhouse gas emissions by 10 Gt CO <sub>2</sub> in the united states by 2050. Energy and Environmental Science, 2023, 16, 2382-2397.	15.6	10
195	Blockchain Meets Metaverse and Digital Asset Management: A Comprehensive Survey. IEEE Access, 2023, 11, 26258-26288.	2.6	24
196	BaÄŸka Bir Evrende ÄŸocuk Olmak: ÄŸocuk Haklar± BaÄŸlam±nda Metaverse. Ä°letiÅŸim Kuram Ve AraÅŸtırma Dergisi, 0, , .	0.2	0
197	Towards Future Internet: The Metaverse Perspective for Diverse Industrial Applications. Mathematics, 2023, 11, 941.	1.1	30
198	Metaverse. Advances in Marketing, Customer Relationship Management, and E-services Book Series, 2023, , 215-223.	0.7	3
199	Visual language integration: A survey and open challenges. Computer Science Review, 2023, 48, 100548.	10.2	0
200	An octonion-based nonlinear echo state network for speech emotion recognition in Metaverse. Neural Networks, 2023, 163, 108-121.	3.3	17

#	ARTICLE	IF	CITATIONS
201	Blockchain for the metaverse: A Review. Future Generation Computer Systems, 2023, 143, 401-419.	4.9	166
202	Detection of Customer Opinions with Deep Learning Method for Metaverse Collaborating Brands. , 2022, , .		1
203	Colorless WDM-PON fronthaul topology for beyond 5G C-RAN architectures. Optical Fiber Technology, 2023, 76, 103244.	1.4	0
204	AÃŠ±k ve Uzaktan Ã–renmede Metaverse: Bir SWOT Analizi. YÃ¼ksekÃ¶retim Ve Bilim Dergisi, 2022, 12, 497-507.		1
205	Envisioning Architecture of Metaverse Intensive Learning Experience (MiLEx): Career Readiness in the 21st Century and Collective Intelligence Development Scenario. Future Internet, 2023, 15, 53.	2.4	13
206	Digital Twins and Enabling Technologies in Museums and Cultural Heritage: An Overview. Sensors, 2023, 23, 1583.	2.1	9
207	Avatar-mediated service encounters: impacts and research agenda. Service Industries Journal, 2023, 43, 134-153.	5.0	4
208	Shaping the Metaverse into Reality: A Holistic Multidisciplinary Understanding of Opportunities, Challenges, and Avenues for Future Investigation. Journal of Computer Information Systems, 2023, 63, 735-765.	2.0	107
209	Emerging information and communication technologies for smart energy systems and renewable transition. Advances in Applied Energy, 2023, 9, 100125.	6.6	26
210	THE INVESTIGATION OF PHYSICAL EDUCATION TEACHERS' METAVERSE KNOWLEDGE LEVELS ACCORDING TO VARIOUS VARIABLES. The Online Journal of Recreation and Sport, 2023, 12, 25-42.	0.1	2
211	Towards Sustainable Virtual Reality: Gathering Design Guidelines for Intuitive Authoring Tools. Sustainability, 2023, 15, 2924.	1.6	3
212	A Collaborative Metaverse based A-La-Carte Framework for Tertiary Education (CO-MATE). Heliyon, 2023, 9, e13424.	1.4	14
213	Exploring the Relationship Between Offline Cultural Environments and Toxic Behavior Tendencies in Multiplayer Online Games. ACM Transactions on Social Computing, 2023, 6, 1-20.	1.7	8
214	What is the Metaverse and who seeks to define it? Mapping the site of social construction. Journal of Information Technology, 2023, 38, 239-266.	2.5	23
215	Designing for the Metaverse: A Multidisciplinary Laboratory in the Industrial Design Program. Future Internet, 2023, 15, 69.	2.4	7
216	The metaverse as a breakthrough for operations and supply chain management: implications and call for action. International Journal of Operations and Production Management, 2023, 43, 1539-1553.	3.5	25
217	The Metaverse, the Built Environment, and Public Health: Opportunities and Uncertainties. Journal of Medical Internet Research, 0, 25, e43549.	2.1	10
218	The rising trend of Metaverse in education: challenges, opportunities, and ethical considerations. PeerJ Computer Science, 0, 9, e1252.	2.7	52

#	ARTICLE	IF	CITATIONS
219	Worldwide Overview and Country Differences in Metaverse Research: A Bibliometric Analysis. Sustainability, 2023, 15, 3541.	1.6	9
221	Metaverse: A New Tool for Real-Time Monitoring of Dynamic Circumstances in the Physical Production System. Lecture Notes in Networks and Systems, 2023, , 397-405.	0.5	0
222	Use of Metaverse Technology in Education Domain. , 2023, 3, 79-86.		9
223	Metaverse for climbing the ladder toward "Industry 5.0"™ and "Society 5.0"™?. Service Industries Journal, 2023, 43, 260-287.	5.0	25
224	Policy support for the promotion of the CG industry in Korea " focusing on evaluation of importance and priority. Asian Journal of Technology Innovation, 2023, 31, 233-259.	1.7	0
225	The merchants of meta: A research agenda to understand the future of retailing in the metaverse. Journal of Retailing, 2023, 99, 173-192.	4.0	50
226	Internet search trends about the Metaverse. , 0, , .		1
227	A Pathway into Metaverse: Gesture Recognition Enabled by Wearable Resistive Sensors. , 2023, 2, .		7
228	Metaverse virtual social center for elderly communication in time of social distancing. Virtual Reality & Intelligent Hardware, 2023, 5, 68-80.	1.8	6
229	Metaverse office: exploring future teleworking model. Kybernetes, 2023, ahead-of-print, .	1.2	5
230	A Scoping Review of the Metaverse for Software Engineering Education: Overview, Challenges, and Opportunities. Presence: Teleoperators and Virtual Environments, 2022, 31, 107-146.	0.3	7
231	SocialFi transforms social media: an overview of key technologies, challenges, and opportunities of the future generation of social media. Social Network Analysis and Mining, 2023, 13, .	1.9	5
232	Bandpass Sigma"Delta Modulation: The Path toward RF-to-Digital Conversion in Software-Defined Radio. Chips, 2023, 2, 44-69.	0.7	0
233	Understanding the intention to use metaverse in healthcare utilizing a mix method approach. International Journal of Healthcare Management, 0, , 1-12.	1.2	7
234	The Role of Network Slicing and Edge Computing in the Metaverse Realization. IEEE Access, 2023, 11, 25502-25530.	2.6	4
235	Prediction of Perceived Consumer Experience, Perceived Brand Engagement, and Gamification towards the Intention to Use Metaverse: An Extended TAM Approach. , 2022, , .		6
236	Learners in the Metaverse: A Systematic Review on the Use of Roblox in Learning. Education Sciences, 2023, 13, 296.	1.4	25
237	Metaverse: Requirements, Architecture, Standards, Status, Challenges, and Perspectives. IEEE Internet of Things Magazine, 2023, 6, 14-18.	2.0	14

#	ARTICLE	IF	CITATIONS
238	Standard Evolution of 5G-Advanced and Future Mobile Network for Extended Reality and Metaverse. IEEE Internet of Things Magazine, 2023, 6, 20-25.	2.0	9
239	Big Data Analytics in the Metaverse: Business Value Creation with Artificial Intelligence and Data-Driven Decision Making. SSRN Electronic Journal, 0, , .	0.4	8
240	A Framework for Constructing a Technology -Enhanced Education Metaverse: Learner Engagement With Humanâ€“Machine Collaboration. IEEE Transactions on Learning Technologies, 2023, 16, 1179-1189.	2.2	3
241	Metaverse of Things in 6G Era: An Emerging Fusion of IoT, XR, Edge AI and Blockchain Technologies. Lecture Notes in Electrical Engineering, 2023, , 546-564.	0.3	1
242	Establishment of Production Standards for Web-based Metaverse Content: Focusing on Accessibility and HCI. Journal of Web Engineering, 0, , .	0.7	1
243	Exploring Hype in Metaverse: Topic Modeling Analysis of Korean Twitter User Data. Systems, 2023, 11, 164.	1.2	1
244	Metaverse: The Potential Threats in the Virtual World. Lecture Notes in Networks and Systems, 2023, , 59-67.	0.5	1
245	Applications and Possible Challenges of Healthcare Metaverse. , 2023, , .		6
246	How Avatar Identification Affects Enjoyment in the Metaverse: The Roles of Avatar Customization and Social Engagement. Cyberpsychology, Behavior, and Social Networking, 2023, 26, 255-262.	2.1	9
247	Sustainability of the Metaverse: A Transition to Industry 5.0. Sustainability, 2023, 15, 6079.	1.6	32
248	A Study on Metaverse in Education. , 2023, , .		2
249	Application of Optical Wireless Communications in IoT Devices of Smart Grids within Smart Sustainable Cities: With Hybrid Perspectives to Metaverse & Quantum IoT. , 2023, , .		2
250	Metaverse Librarians. Advances in Marketing, Customer Relationship Management, and E-services Book Series, 2023, , 253-272.	0.7	0
251	A Concise Review on the Concept of Metaverse. Advances in Marketing, Customer Relationship Management, and E-services Book Series, 2023, , 40-67.	0.7	0
252	The Metaverse evolution: Toward Future Digital Twin Campuses. , 2022, , .		1
253	Unlocking the Potential of the Metaverse. Advances in Marketing, Customer Relationship Management, and E-services Book Series, 2023, , 182-201.	0.7	0
254	Speech Enhancement Performance Based on the MANNER Network Using Feature Fusion. Electronics (Switzerland), 2023, 12, 1768.	1.8	0
255	Arabic English Speech Emotion Recognition System. , 2023, , .		0

#	ARTICLE	IF	CITATIONS
256	Mapping the Scientific Landscape of Metaverse Using VOSviewer and Bibliometrix. , 2023, , .		0
257	Unravelling the techno-functional building blocks of metaverse ecosystems â€“ A review and research agenda. International Journal of Information Management Data Insights, 2023, 3, 100176.	6.5	17
258	Edu-Metaverse: concept, architecture, and applications. Interactive Learning Environments, 0, , 1-28.	4.4	7
259	A Contract Theory-based Incentive Mechanism for UAV-enabled VR-based Services in 5G and Beyond. IEEE Internet of Things Journal, 2023, , 1-1.	5.5	0
260	Understanding Consumer Behavior in the Metaverse: a Study on the Effect of Product, Tripartite Value, and Buying & Brand Perception in Virtual Vs. Physical Environments. SSRN Electronic Journal, 0, , .	0.4	0
261	Towards a Metaverse Workspace: Opportunities, Challenges, and Design Implications. , 2023, , .		9
262	Applications of Metaverse in the Healthcare Industry. , 2023, , .		0
263	Simulating a Digital Factory and Improving Production Efficiency by Using Virtual Reality Technology. Applied Sciences (Switzerland), 2023, 13, 5118.	1.3	4
264	Promising Emerging Technologies for Teaching and Learning: Recent Developments and Future Challenges. Sustainability, 2023, 15, 6917.	1.6	9
265	Recent Advances in Cognitive Informatics and Cognitive Computing towards Autonomous Systems (Plenary Panel Report-II of IEEE ICCI*CC'22). , 2022, , .		1
266	Innovative Trends in the 6G Era: A Comprehensive Survey of Architecture, Applications, Technologies, and Challenges. IEEE Access, 2023, 11, 39824-39844.	2.6	32
269	MultiModal Data Challenge in Metaverse Technology. Studies in Big Data, 2023, , 185-210.	0.8	1
270	The Implication of Metaverse in the Traditional Medical Environment and Healthcare Sector: Applications and Challenges. Studies in Big Data, 2023, , 105-133.	0.8	3
280	Metaverse -An overview of daily usage and risks. , 2023, , .		1
290	Does Virtual Hotel Shifting Realities or Just Daydreaming? A Wake-Up Call. Journal for Labour Market Research, 2023, , 37-64.	0.6	0
293	Metaverse. Advances in Wireless Technologies and Telecommunication Book Series, 2023, , 64-91.	0.3	0
300	Intelligent Librarians in the Metaverse. Advances in Library and Information Science, 2023, , 45-63.	0.2	0
301	The Metaverse and Digital Libraries. Advances in Library and Information Science, 2023, , 1-22.	0.2	5

#	ARTICLE	IF	CITATIONS
304	Integration of security and compressing mechanism to man-age big data for meta-verse. AIP Conference Proceedings, 2023, , .	0.3	1
305	MetaStrategy of MetaCities. Advances in Human and Social Aspects of Technology Book Series, 2023, , 99-114.	0.3	0
312	Deep Learning for Spatial Computing: Augmented Reality and Metaverse â€œthe Digital Universeâ€. Synthesis Lectures on Engineering Science and Technology, 2023, , 131-150.	0.2	1
315	Potenziale eines Metaverse fÃ¼r die Entwicklung von Smart Services. Forum Dienstleistungsmanagement, 2023, , 233-259.	1.0	0
320	Deepening Branding Opportunities in VR-Based Metaverses. A Qualitative Study. Springer Proceedings in Business and Economics, 2023, , 37-45.	0.3	0
322	Smart Extended Reality in the Metaverse-Tailing: The Rise of New Retail Landscape. Springer Series on Cultural Computing, 2023, , 307-321.	0.4	0
324	Identifying The Types and Platforms of the Metaverse â€œ a Systematic Literature Review. , 2022, , .		0
325	Demystifying and Analysing Metaverse Towards Education 4.0. , 2023, , .		3
327	Identity Threats in the Metaverse and Future Research Opportunities. , 2023, , .		2
328	Metaverse for Brain Computer Interface: Towards New and Improved Applications. Studies in Big Data, 2023, , 43-58.	0.8	2
329	Designing an Augmented Reality Authoring Tool to Support Complex Tasks. A Design Science Study Using Cognitive Load Theory. Lecture Notes in Computer Science, 2023, , 87-101.	1.0	0
330	Digital Marketing in the Metaverse. Advances in Marketing, Customer Relationship Management, and E-services Book Series, 2023, , 163-175.	0.7	1
332	Intelligent Libraries. Advances in Marketing, Customer Relationship Management, and E-services Book Series, 2023, , 1-18.	0.7	0
333	Challenges and Opportunities to the Media and Entertainment Industry in Metaverse. Advances in Marketing, Customer Relationship Management, and E-services Book Series, 2023, , 88-102.	0.7	1
334	An Innovative Development with Multidisciplinary Perspective in Metaverse Integrating with Blockchain Technology with Cloud Computing Techniques. , 2023, , .		2
337	Exploring the Energy Metaverse: Potential Benefits and Challenges. , 2023, , .		0
339	Exploring the Knowledge Sharing Dynamics in Virtual Communities Within the Metaverse Domain. Advances in Business Information Systems and Analytics Book Series, 2023, , 135-153.	0.3	0
340	Evaluating Studentsâ€™ Technology Acceptance of Use of Metaverse as an Educational Information System for Hybrid Education. , 2023, , .		0

#	ARTICLE	IF	CITATIONS
342	Open Metaverse with Open Software. Lecture Notes in Computer Science, 2023, , 583-596.	1.0	1
344	Metaverse in Marketing. Advances in Computational Intelligence and Robotics Book Series, 2023, , 204-227.	0.4	3
345	Unleashing the Power of the Metaverse in Intelligent Libraries. Advances in Computational Intelligence and Robotics Book Series, 2023, , 317-330.	0.4	0
346	An Innovative Teaching Model. Advances in Computational Intelligence and Robotics Book Series, 2023, , 105-126.	0.4	3
347	Hybrid Optimization Techniques for Data Privacy Preserving in the Metaverse Ecosystem. Advances in Computational Intelligence and Robotics Book Series, 2023, , 395-408.	0.4	0
355	Pseudo-haptic Feedback Design for Virtual Activities in Human Computer Interface. Lecture Notes in Computer Science, 2023, , 253-265.	1.0	0
360	Machine Learning in Terahertz Communication. , 2023, , 285-296.		0
361	Quantum Neural Networks driven Stochastic Resource Optimization for Metaverse Data Marketplace. , 2023, , .		2
362	Using Extended Reality Technology in Science Education. , 2023, , .		1
368	The Metaverse for Enterprises. Lecture Notes in Networks and Systems, 2023, , 299-309.	0.5	0
371	The Application of Artificial Intelligence in Metaverse: A New Challenge on Personal Data Protection in the Financial System. Contributions To Management Science, 2023, , 117-126.	0.4	0
372	Self-Sovereign Identity for Trust and Interoperability in the Metaverse. , 2022, , .		4
373	Metaverse and Digital Twins. Advances in Marketing, Customer Relationship Management, and E-services Book Series, 2023, , 217-235.	0.7	0
375	The Opportunities & Challenges of the Metaverse for Fashion Brands. Springer Texts in Business and Economics, 2023, , 389-410.	0.2	2
377	An Overview About Mechanics Developments and Achievements in the Context of Industry 4.0. Lecture Notes in Networks and Systems, 2023, , 17-41.	0.5	0
382	The Metaverse: Investigating the Motivations and Experiences of Early Adopters in RecRoom. , 2023, , .		0
385	Video Avatar Communication Among HMD Users in Metaverse Environment. Lecture Notes on Data Engineering and Communications Technologies, 2023, , 316-324.	0.5	0
387	Towards place-based privacy: Challenges and opportunities in the "smart" world. , 2022, , .		0

#	ARTICLE	IF	CITATIONS
388	Facilitating Metaverse Integration in Education via Extended Reality and the Internet of Things: AN OVERVIEW. , 2023, , .		1
389	Integrated Geospatial Information Management in the World of Metaverse. Advances in Web Technologies and Engineering Book Series, 2023, , 248-270.	0.4	1
395	Rise of digital fashion and metaverse: influence on sustainability. , 2023, 1, .		1
407	Reputation-Based Trust Assessment of Transacting Service Components. , 2023, , .		0
408	Enhancing Security and Scalability of Metaverse with Blockchain-based Consensus Mechanisms. , 2023, , .		4
410	Optimized NLP Models for Digital Twins in Metaverse. , 2023, , .		1
411	Social engineering in metaverse environment. , 2023, , .		0
412	What Affects the Adoption of Metaverse in Education? A SEM-based Approach. , 2023, , .		1
413	Utility-Oriented Wireless Communications for 6G Networks: Semantic Information Transfer for IRS aided Vehicular Metaverse. , 2023, , .		2
416	Using Machine Learning and SEM to Analyze Attitudes towards adopting Metaverse in Higher Education. , 2023, , .		0
419	MetaCUX: Social Interaction and Collaboration in the Metaverse. Lecture Notes in Computer Science, 2023, , 528-532.	1.0	0
420	Poster: Programmable Cycle-Specified Queue for Deterministic Networking. , 2023, , .		0
427	An Introduction to Web3 and Metaverse. , 2023, , 1-25.		0
434	Are You Ready to Take Avatar in Virtual Classroom? Metaverse in Education from Student's Perspective. , 2023, , 37-50.		3
435	Opportunities and Risks of the "Metaverse" for Environmental Sustainability. , 2023, , 95-103.		1
436	Metaverse Technologies and Applications: A Study. Lecture Notes in Electrical Engineering, 2023, , 287-300.	0.3	0
439	Unveiling the Path to Knowledge Sharing and Innovation in Metaverse Virtual Communities. Advances in Computational Intelligence and Robotics Book Series, 2023, , 309-327.	0.4	0
452	Metaverse Libraries. Advances in Social Networking and Online Communities Book Series, 2023, , 116-130.	0.3	0

#	ARTICLE	IF	CITATIONS
454	A Survey on the Security of the Metaverse. , 2023, , .		0
455	Metaverse Key Technologies and Blockchains: Impacts & Considerations. , 2023, , .		0
456	The Metaverse for Intelligent Healthcare using XAI, Blockchain, and Immersive Technology. , 2023, , .		2
457	Donna: A Data Model for Enabling Extensible and Efficient Metaverse Applications. , 2023, , .		0
458	Layerwise Interoperability in Metaverse: Key to Next-Generation Electronic Commerce. , 2023, , .		1
459	Text-to-Metaverse: Towards a Digital Twin-Enabled Multimodal Conditional Generative Metaverse. , 2023, , .		1
460	Threat Model-based Security Analysis and Mitigation Strategies for a Trustworthy Metaverse. , 2023, , .		1
461	A Blockchain-based Authentication Protocol for Metaverse Environments using a Zero Knowledge Proof. , 2023, , .		0
462	Advanced Learning Schemes for Metaverse Applications in B5G/6G Networks. , 2023, , .		1
463	Wi-Six: Precise Positioning in the Metaverse via Optimal Wi-Fi Router Deployment in 6G Networks. , 2023, , .		2
464	Challenges in Metaverse Research: An Internet of Things Perspective. , 2023, , .		0
465	Metaverse Cybersecurity Threats and Risks Analysis: The case of Virtual Reality Towards Security Testing and Guidance Framework. , 2023, , .		0
466	Instantaneous Account Settlement in Roll-Up based Layer-2 Blockchain Framework for Metaverse Applications. , 2023, , .		0
467	Unlicensed Spectrum Assisted Connection in 5G-NR Enabled Metaverse. , 2023, , .		0
468	A Survey on Metaverse: Applications, Crimes and Governance. , 2023, , .		0
469	A Lightweight and Secure Three-Factor Access Authentication Scheme in Metaverse. , 2023, , .		0
474	Consumer Behavior in the Metaverse. Studies in Big Data, 2023, , 161-175.	0.8	1
475	The Role of the Law in Metaverse Regulation. Studies in Big Data, 2023, , 259-274.	0.8	0

#	ARTICLE	IF	CITATIONS
476	Data Privacy and Security in the Metaverse. <i>Studies in Big Data</i> , 2023, , 123-133.	0.8	2
477	The Extended Reality Technology and Its Utilization in Metaverse. <i>Studies in Big Data</i> , 2023, , 65-81.	0.8	0
478	Evaluation of Open Source, Open Data Sharing, and Data Anonymization Concepts in the Development of the Metaverse. <i>Studies in Big Data</i> , 2023, , 83-98.	0.8	0
481	Metaverse Innovation for Start-up Creation. <i>Innovation, Technology and Knowledge Management</i> , 2023, , 185-206.	0.4	0
482	A Generic Approach on Current Technologies in Metaverse. , 2023, , .		0
484	Bibliometric Analysis of Trend in Metaverse Research. , 2023, , .		0
488	Metaverse, Education, and Inclusion: Integrative Review Using the PRISMA Method. <i>Smart Innovation, Systems and Technologies</i> , 2023, , 587-598.	0.5	0
490	MAIVS: Machine Learning Based Adaptive UHD 360-Degree Immersive Video Streaming. , 2023, , .		0
491	Quantum Computing Empowered Metaverse: An Approach for Resource Optimization. , 2023, , .		1
492	Augmented Reality and Virtual Reality in Cultural Heritage Tourism Enhancing Visitor Experiences. <i>Advances in Hospitality, Tourism and the Services Industry</i> , 2023, , 13-34.	0.2	5
505	Metaverse token price forecasting using artificial neural networks (ANNs) and Adaptive neural fuzzy inference system (ANFIS). <i>Neural Computing and Applications</i> , 2024, 36, 3267-3290.	3.2	0
512	Digital Twins, Metaverse, and Learning. Review and Proposal of Conceptual Framework. <i>Communications in Computer and Information Science</i> , 2024, , 515-532.	0.4	0
513	Cybersecurity in the Metaverse: Challenges and Approaches. , 2023, , .		0
514	Edge Computing for the Metaverse: Balancing Security and Privacy Concerns. , 2023, , .		0
515	Designers' Expectations from Virtual Product Experience in Metaverse. , 2023, , .		0
516	The Metaverse: Exploring the Convergence of Technologies and Social Dynamics. , 2023, , .		0
518	Metaverse with the Internet of Things: Convergence of Physical and Cyber Worlds. <i>Lecture Notes in Networks and Systems</i> , 2023, , 117-134.	0.5	0
519	Black Women Will Save Us. <i>Advances in Higher Education and Professional Development Book Series</i> , 2023, , 94-120.	0.1	0

#	ARTICLE	IF	CITATIONS
522	Blockchain Oracles for Asset Ownership Verification and Trust Establishment in the Metaverse. Lecture Notes in Networks and Systems, 2023, , 509-514.	0.5	0
525	Exploring the Use of Metaverse for Collaborative Learning in Higher Education: A Scoping Review. Lecture Notes in Computer Science, 2023, , 240-251.	1.0	1
529	From Classroom to Metaverse: A Study on Gamified Constructivist Teaching in Higher Education. Lecture Notes in Computer Science, 2023, , 92-106.	1.0	0
530	Sculpting digital identities: the interplay of aesthetic medicine, plastic surgery, and the metaverse. European Journal of Plastic Surgery, 2023, 46, 845-854.	0.3	0
532	Human-Computer Interaction in the Emerging Metaverse: Social Implications and Design Principles for the Sustainable Metaverse. Lecture Notes in Computer Science, 2023, , 492-504.	1.0	0
538	Seven Layers of Metaverse. , 2023, , 45-66.		0
541	Design of a Bespoke Web-Based 3D Virtual Venue and Video Streaming Event Platform. Intelligent Systems Reference Library, 2023, , 527-547.	1.0	0
542	Metaverse: A Bibliometric Analysis by Internet Crawler and Big Data Technology. , 2023, , .		0
543	Live Coding in the Metaverse. , 2023, , .		0
544	Virtual world “ Metaverse governance conceptual framework. AIP Conference Proceedings, 2023, , .	0.3	0
545	Use Digital Twins and the Metaverse to Analysis Data in the Agglomeration Transport Network. , 2023, , .		0
547	Metaverse Creation And Decentralized Land NFTs Over Blockchain. , 2023, , .		0
553	Transformative Effect of Virtual Reality and the Metaverse. Advances in Human and Social Aspects of Technology Book Series, 2023, , 255-273.	0.3	0
555	Towards a Platform for Higher Education in Virtual Reality of Engineering Sciences. Communications in Computer and Information Science, 2024, , 107-119.	0.4	0
556	Building an Inclusive Metaverse: Opening Doors to a Brighter Digital Future. Lecture Notes in Computer Science, 2023, , 333-351.	1.0	0
568	Security Risk Assessment of Metaverse Based Healthcare Systems Based on Common Vulnerabilities and Exposures (CVE). , 2023, , .		0
569	Review of Fundamental, Security, and Privacy in Metaverse. , 2023, , .		0
571	The Future of Metaverse in Improving the Quality of Higher Education: A Systematic Review. Lecture Notes in Networks and Systems, 2023, , 108-130.	0.5	0

#	ARTICLE	IF	CITATIONS
572	Integrating Ideal Characteristics of Chat-GPT Mechanisms into the Metaverse: Knowledge, Transparency, and Ethics. Lecture Notes in Networks and Systems, 2023, , 131-141.	0.5	0
576	Exploring Research Trends of Metaverse: A Bibliometric Analysis. Lecture Notes in Networks and Systems, 2023, , 21-34.	0.5	0
577	Evaluation of the Metaverse: Perspectives of Travel Agency Employees. Lecture Notes in Networks and Systems, 2023, , 1-20.	0.5	0
579	Customer Experience in the Magic World of Metaverse: Conceptual Framework of Customer Adoption of Metaverse. , 2024, , 99-126.		0
580	Das Metaversum und seine Rolle im Gesundheitsmarkt. , 2023, , 255-259.		0
586	Big Data Analytics and Artificial Intelligence for Metaverse Practices in Business. Advances in E-Business Research Series, 2023, , 27-56.	0.2	0
590	Metaverse in Manufacturing Using Emerging Technologies: An Overview For The Smart Industry 4.0. , 2023, , .		0
591	On the Feasibility of Zero-Trust Architecture in Assuring Security in Metaverse. , 2023, , .		0
592	Trust But Verify - Blockchain-Empowered Decentralized Authentication Schema on the Metaverse: A Self-Sovereign Identity Approach. , 2023, , .		0
593	Toward a Secure Educational Metaverse: A Tale of Blockchain Design for Educational Environments. , 2023, , .		1
594	Exploring Sentiment and Topic Patterns in Metaverse Marketplace-Related Tweets. , 2023, , .		0
596	DELICAS: Deep Reinforcement Learning Based GPU CaaS Packet Scheduling for Stabilizing QoE in 5G Multi-Access Edge Computing. Communications in Computer and Information Science, 2024, , 55-66.	0.4	0
599	Exploring Interaction in a Virtual Music Studio through Gesture Recognition on Smartwatches and HMD Devices. , 2023, , .		0
604	The "Metaverse Mania" in Healthcare Education: Students' Technology Acceptance. Communications in Computer and Information Science, 2024, , 157-174.	0.4	0
606	Safety for Digital Immersive Environments and Social Economic Dynamics Based on Designing the Metaverse. Advances in Business Information Systems and Analytics Book Series, 2024, , 281-309.	0.3	0
616	Industrial Metaverse: Solutions from a Higher-Dimensional World. Lecture Notes in Networks and Systems, 2024, , 22-29.	0.5	0
621	Privacy and Security Landscape of Metaverse. Advances in Intelligent Systems and Computing, 2024, , 403-417.	0.5	0
630	Feeling the Elephant: Insiders' Perspectives on the Metaverse. Lecture Notes in Business Information Processing, 2024, , 427-441.	0.8	0

#	ARTICLE	IF	CITATIONS
635	Utilization of Decentralized Autonomous Organization (DAO) for Virtual Property Transaction Governance in Metaverse: A Conceptual Framework. , 2023, , .		0
637	The Dark Side of the Metaverse: Why is it Falling Short of Expectations?. , 2023, , .		0
638	Seamless Asset Exchange in Interconnected Metaverses: Unraveling On-Chain Atomic Swap. , 2023, , .		0
647	Industry Experts and Business Consultants' Takes on India's Readiness for Metaverse. Advances in Social Networking and Online Communities Book Series, 2024, , 132-147.	0.3	0
648	The Power of AI for the Sake of the Metaverse in Education. Advances in Educational Technologies and Instructional Design Book Series, 2023, , 153-165.	0.2	0
649	Transitioning to Digital Merchandise. Advances in Social Networking and Online Communities Book Series, 2024, , 71-96.	0.3	0
653	The metaverse and smart cities. , 2024, , 37-54.		0
654	Introduction to the metaverse. , 2024, , 1-18.		0
658	A Review Study on the Challenges and Opportunities in Implementing the Metaverse in Healthcare. Advances in Hospitality, Tourism and the Services Industry, 2024, , 293-303.	0.2	0
659	ChatGPT Implementation in the Metaverse: Towards Another Level of Immersiveness in Education. , 2024, , 421-436.		0
661	Digital Innovation in the Service Sector. Advances in Hospitality, Tourism and the Services Industry, 2024, , 150-165.	0.2	0
671	Redefining Industry Dynamics. Advances in Hospitality, Tourism and the Services Industry, 2024, , 176-193.	0.2	0