Murat Koyuncu, Ph.D.
Professor of Computer Science
Atılım University
Department of Information Systems
06830 İncek, Gölbaşı, Ankara/TURKEY
murat.koyuncu@atilim.edu.tr
Tel: +90 312 586 8341

EDUCATION

1996-2001	Middle East Technical University (METU), Computer Science, Ph.D.
1992-1995	Middle East Technical University (METU), Computer Science, M.S.
1982-1986	TMA, Electrical and Electronics Engineering, B.S.

ACADEMIC POSITIONS

2020-	Prof.Dr., Department of Information Systems Atilim University, Turkey
2013-2020	Assoc.Prof.Dr., Department of Information Systems Atilim University, Turkey
2006-2013	Assist.Prof.Dr., Department of Information Systems Atilim University, Turkey

ADMINISTRATIVE DUTIES

2021-	Head of Department of Information Systems Atilim University, Turkey
2007-2015	Head of Department of Information Systems Atilim University, Turkey

RESEARCH INTERESTS

1	Wireless Multimedia Sensor Networks (WMSN)
2	Internet of Things (IoT)
3	Machine Learning
4	Multimedia Data Modeling
5	Fuzzy Database Modeling
6	Computer security

PUBLICATIONS (SCI-E/SSCI)

1	A.Yazici and M.Koyuncu, "Fuzzy Object-Oriented Database Modeling with Fuzzy Logic", Fuzzy Sets & Systems, 89, 1-26, 1997.
2	M.Koyuncu and A. Yazici. "IFOOD: An Intelligent Fuzzy Object-Oriented Database Architecture" in IEEE Transactions on Knowledge and Data Engineering, Vol.15, No:5, pp:1-18, 2003.

3	Adnan Yazici, Cagri Ince, and Murat Koyuncu. "An Indexing Technique for Similarity-Based Fuzzy Object-Oriented Data Model", FQAS 2004, Lecture Notes in Computer Science(LNCS), Vol.3055, pp.334-347, 2004.
4	M.Koyuncu and A.Yazıcı. "A Fuzzy Knowledge-Based System for Intelligent Retrieval". In IEEE Transaction on Fuzzy Systems, Vol.13, No:3, pp:317-330, 2005.
5	A.Yazici, Ç.İnce and M. Koyuncu. "FOOD Index: A Multidimensional Index Structure for Similarity-Based Fuzzy Object-Oriented Database Models". In IEEE Transaction on Fuzzy Systems, Vol.16, No.4, pp.942-957, 2008.
6	N.B.Özgür, M. Koyuncu ve A.Yazıcı, "An Intelligent Fuzzy Object-Oriented Database Framework for Video Database Applications", Fuzzy Sets and Systems, Vol.160, No:15, pp.2253-2274, 2009.
7	D.Küçük, N.B.Özgür, A.Yazici and M.Koyuncu, "A fuzzy conceptual model for multimedia data with a text-based automatic annotation scheme", The International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems (IJUFKS), Vol.17, No: Supp01, pp.135-152, 2009.
8	O.Dilli, N.Akçam and M.Koyuncu, "Application of FNBDT/SCIP Protocol on Local Area Network and Determination of Limit Values", Journal of the Faculty of Engineering and Architecture of Gazi University, Vol.25, No.2. pp.275-283, 2010.
9	H.Kılıç, M.Koyuncu, M.Rehan, "Designing Senior Graduation Project Course for Computing Curricula: An Active Learning Approach", International Journal of Engineering Education, Vol.26, No.6, pp. 1472–1483, 2010.
10	S.Misra, I.Akman, M.Koyuncu, "An inheritance complexity metric for object-oriented code: A cognitive approach", SADHANA - Academy Proceedings in Engineering Sciences, Vol.36, pp.317-337, 2011
11	M.Koyuncu, "Intelligent Fuzzy Queries for Multimedia Databases", International Journal of Intelligent Systems, Vol.26, No.10, pp. 930-951, 2011.
12	O.Dilli, N.Akcam, M.Koyuncu, "Determining the limit values in end-to-end secure communication within satellite network with FNBDT/SCIP", Energy Education Science and Technology Part A: Energy Science and Research, Vol.29, No.1, pp.627-642, 2012.
13	M.Koyuncu, M.K.Gerçek, "A Model Proposal to Optimize Bandwidth Usage in Multi-Access Wireless Networks", Technical Gazette, Vol.19, No.4, pp.939-945, 2012.
14	S.T.Ozyer, B.Tavli, K.Dursun, M.Koyuncu, "Systematic investigation of the effects of unidirectional links on the lifetime of wireless sensor networks", Computer Standards & Interfaces, Vol.36, No:1, pp. 132-142, 2013.
15	Ç.Turhan, G.Şengül, M.Koyuncu, "A Comprehensive Assessment Plan for Accreditation in Engineering Education: A Case Study in Turkey", International Journal of Engineering Education, Vol. 31, No. 5, pp. 1270–1281, 2015.

16	A.Yazici, M. Koyuncu, T. Yilmaz, S. Sattari, M. Sert, E.Gulen, "An intelligent multimedia information system for multimodal content extraction and querying", Multimedia Tools and Applications, Vol. 77, No. 2, pp. 2225–2260, 2018.
17	H.Haqaf, M.Koyuncu, "Understanding key skills for information security managers", International Journal of Information Management, Vol. 43, pp. 165–172, 2018.
18	M.Koyuncu, A.Yazici, M.Civelek, A.Cosar, M. Sert, "Visual and Auditory Data Fusion for Energy-Efficient and Improved Object Recognition in Wireless Multimedia Sensor Networks", IEEE Sensors Journal, Vol. 19, No. 5, pp.1839-1849, 2019.
19	G.Yurtalan, M. Koyuncu, C.Turhan, "A polarity calculation approach for lexicon-based Turkish sentiment analysis", Turkish Journal of Electrical Engineering & Computer Sciences, Vol.27, pp.1325-1339, 2019.
20	M.Koyuncu, T.Pusatlı, "Security Awareness Level of Smartphone Users: An Exploratory Case Study", Mobile Information Systems, Vol. 2019, Article ID 2786913, 2019.
21	A.Yazıcı, M.Koyuncu, S.A.Sert, T.Yılmaz, "A Fusion-Based Framework for Wireless Multimedia Sensor Networks in Surveillance Applications", IEEE Access, vol. 7, pp. 88418-88434, 2019.
22	O. Emmanuel, A. Misra, S. Misra, M. Koyuncu, "A Deep Neural Network-Based Advisory Framework for Attainment of Sustainable Development Goals 1-6", Sustainability, Vol. 12 Issue. 24, Article Number: 10524, 2020
23	H. Vural and M. Koyuncu, "Does Domain-Driven Design Lead to Finding the Optimal Modularity of a Microservice?," in *IEEE Access*, vol. 9, pp. 32721-32733, 2021, doi: 10.1109/ACCESS.2021.3060895.

CONFERENCE PRESENTATIONS

1	A.Yazici and M. Koyuncu, A Fuzzy Object-Oriented System Utilizing Logic Programming, The Proc. of the Sixth Int. Fuzzy Systems Associations (IFSA) World Congress, Sao Paulo, Brazil, 1995.
2	M.Koyuncu, A. Yazici and R. George, "IFOOD: An Intelligent Object-Oriented Database Architecture", DEXA'99, Lecture Notes in Computer Science(LNCS), Vol. 1677, pp.36-45, 1999.
3	M.Koyuncu, A. Yazici and R. George "Flexible Querying in an Intelligent Object-Oriented Database Environment", Proc. of the 4th International Conference on Flexible Query Answering Systems (FQAS'2000), Advances in Soft Computing, Warsaw, Poland, Oct. 2000, pp 75-84.
4	M.Koyuncu and A. Yazici. "A Fuzzy Database and Knowledge Base Environment for Intelligent Retrieval". IFSA'2001, June 2001, Vancouver, Canada.
5	M.Koyuncu. "An Alternative Product Extraction Method for E-Commerce Applications", Proc.of the 18th Int.Workshop on Database and Expert Systems Applications (DEXA'07), Regensburg, Germany, Sept.2007, pp 397-401.
6	E.Açar, S.Arslan, A.Yazici and M.Koyuncu, "Slim-Tree and Bitmatrix Index Structures in Image Retrieval System Using MPEG-7 Descriptors", Sixth International Workshop on Content-Based Multimedia Indexing (CBMI-2008),

	June 18-20, 2008, London, UK.
7	D. Kucuk, N. B. Ozgur, A. Yazici, and M. Koyuncu, "A Fuzzy Conceptual Model for Multimedia Data with Application to News Video Domain", In Proc. of the Int. Conf. on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU), June 22-27, 2008, Malaga, Spain.
8	M.Rehan and M.Koyuncu, "Towards E-Government: A Survey of Turkey's Progress", In Proc.of First Int.Conf. on eGovernment and eGovernance, March 12-13, 2009, Ankara, Turkey.
9	M.Koyuncu, "Fuzzy Querying in Intelligent Information Systems", 8th Int. Conf. on Flexible Query Answering Systems (FQAS 2009), October 26-28, 2009, Roskilde, Denmark, Lecture Notes in Artificial Intelligence, Vol. 5822, pp.536-547.
10	M.Koyuncu, M.K.Gercek, T.Ercan, "Host Based Dynamic Throughput Maximization Model for IEEE 802.11 WLAN", 2nd Int. Workshop on Computer Networks & Communications (CoNeCo-2010), June 26-28, 2010, Ankara, Turkey, Communications in Computer and Information Science, Springer, Vol.84, pp.315-326.
11	M.Koyuncu, T.Yilmaz, Y.Yildirim and A.Yazici, "A Framework for Fuzzy Video Content Extraction, Storage and Retrieval", IEEE Int. Conf. on Fuzzy Systems (FUZZ-IEEE 2010), July 18-23, 2010, Barcelona, Spain.
12	U.Demir, M.Koyuncu, A.Yazici, T.Yilmaz, and M.Sert, "Flexible Content Extraction and Querying for Videos", 9th Int. Conf. on Flexible Query Answering Systems (FQAS 2011), October 26-28, 2011, Ghent, Belgium, Lecture Notes in Artificial Intelligence, Springer, Vol. 7022, pp. 460-471.
13	U.L. Altintakan, A.Yazici and M.Koyuncu, "A Novel Fuzzy Visual Object Classification Approach", IEEE Int. Conf. on Fuzzy Systems (FUZZ-IEEE 2012), June 10-15, 2012, Brisbane, Australia.
14	S.Misra, M.Koyuncu, M.Crasso, C.Mateos and A.Zunino, "A suite of cognitive complexity metrics", 12th Int. Conf. on Computational Science and Its Applications (ICCSA 2012), June 18-21, 2012, Salvador de Bahia, Brazil, Lecture Notes in Computer Science, Springer, Vol.7336, pp. 234-247.
15	S.Tarıyan Özyer, B.Tavlı, M.Koyuncu, "Optimal Energy Efficient Routing in Wireless Sensor Networks with Link Asymmetry", 9.Int.Conf. on Communications (COMM 2012), June 21-23, 2012, Bucharest, Romania.
16	M.Koyuncu, A.Bostan, "Filling the Gap Between Theory and Practice in Engineering Education: A Case Study in Computer Science Courses", 2nd Int.Engineering Education Conference, Oct.31-Nov.3, 2012, Antalya, Turkey.
17	O.Dilli, N.Akçam, M.Koyuncu, E.Öğüşlü, "Secure Communication Tests Carried out With Next Generation Narrow Band Terminal in Satellite and Local Area Networks", 6th Int.Conf. on Recent Advances in Space Technologies (RAST2013), 12-14 June 2013, İstanbul.
18	M. Koyuncu, B. Cetinkaya, "A component-based object detection method extended with a fuzzy inference engine", IEEE International Conference on Fuzzy Systems (FUZZ-IEEE 2015), 2-5 Aug. 2015, Istanbul, Turkey.

19	M. Koyuncu, H. AL-Fayyadh, "Comparison of scheduling algorithms for multimedia applications in IPv4 and IPv6", 9th International Conference on Application of Information and Communication Technologies (AICT), 14-16 Oct. 2015, Rostov on Don, Russia.
20	A. Yazici, S. Sattari, T. Yilmaz, M. Sert, M. Koyuncu, E. Gulen, "METU-MMDS: An Intelligent Multimedia Database System for Multimodal Content Extraction and Querying", MMM 2016, Part II, LNCS 9517, pp.354-360, 2016.
21	H. Vural, M. Koyuncu, S. Guney, A Systematic Literature Review on Microservices, In: Gervasi O. et al. (eds) Computational Science and Its Applications – ICCSA 2017, Lecture Notes in Computer Science, 10409 (ICCSA-2017 (6), 203-217, 2017.
22	H. Vural, M. Koyuncu, S. Misra, A Case Study on measuring the Size of Microservices, In: Gervasi O. et al. (eds): ICCSA 2018, Lecture Notes in Computer Science, 10964, pp. 454-463, 2018.
23	A.N. Ozdin, A.Yazici, M.Koyuncu, "Fuzzy Semantic Web Architecture for Activity Detection in Wireless Multimedia Sensor Network Applications", 2019 Conference of the International Fuzzy Systems Association and the European Society for Fuzzy Logic and Technology (EUSFLAT 2019), Prague, Czech Republic, September 9-13, 2019.

PROJECTS

1	2006 - 2009: "An Intelligent and Fuzzy Object-Oriented Database Modeling and Development for Multimedia Applications", TUBITAK (Research Institute of Science and Technology of Turkey) - EEEAG-106E012, Turkey.
2	2009 - 2013: "Multimodal Semantic Content Extraction, Storage and Querying for Video", TUBITAK (Research Institute of Science and Technology of Turkey) - EEEAG-109E014, Turkey.
3	2015 - 2018: "Design and Development of a Fusion-Based Framework for Surveillance Applications in Wireless Multimedia Sensor Networks", TUBITAK (Research Institute of Science and Technology of Turkey) - 114R082, Turkey.

CITATIONS

Sum of times cited without self-citations (ISI Web of Science):	314
H-index (ISI Web of Science):	11

COURSES GIVEN

1	Fundamentals of Computing
2	Multimedia Systems
3	Computer Networks

4	Computer Security
5	Cloud Computing
6	Fundamentals of the Internet of Things (IoT)

THESES SUPERVISED

PhD

1	Orkun Dilli, Gelecek Nesil Darbant Terminal Cihazlarının Farklı Şebekeler Üzerinde Testi ve Haberleşmeye Ait Sınır Değerlerin Elde Edilmesi, 2011 (Eş danışman)
2	S.Tarıyan Özyer, Exploration of the design space for lifetime optimization in wireless sensor networks with unidirectional links, 2012
3	Hasan Umut Akın, A Functional Model Suggestion to Improve Technology Management in Defense Planning Cycle: A Case Study For Turkey, 2015 (Co-supervisor)
4	Güzin Tirkeş, Multi-product, Multi-Stage Production Planning Model and Decision Support System Suggestion for F&B Industry, 2016 (Co-supervisor)
5	Hülya Vural, Estimation on Optimal Size of Microservices, 2020

Master

1	D.Turan Üstündağ, Comparative Routing Performance Analysis of IPv4 and IPv6, 2009
2	M.Kazım Gerçek, A Proposal to Increase Bandwidth Usage in a Multiple Access Point Environment, 2009
3	S.Çamalan, Analysis of Filtering and Quantization Preprocessing Steps in Image Segmentation, 2013
4	Sercan Noyan Germiyanoğlu, Improving Reverse Supply Chain Management with Information and Communication Technologies, 2015
5	Haydar Al-Fayyadh, Comparison of IPv4 and IPv6 for Multimedia Data Transmission, 2015
6	Faris Al-Fayyadh, Comparison of Various Transition mechanism from IPv4 to IPv6, 2015
7	Samar Husain, Counting Number of People in Digital Images Using Face and People Detection Algorithms, 2016
8	Gökhan Yurtalan, Sentiment Analysis for Turkish Social Media: A Case Study On Twitter, 2016
9	Waleed Al-Zubaidi, A System Proposal for Counting the Number of People in Still Images, 2017
10	Safa Othman, Investigating the Usage of Mobile Applications versus Web Browsers for Smartphones, 2017
11	Haidar Al-Zeyadi, Detection of Forbidden Objects in X-ray Images, 2017
12	Safa Alqrgholei, Performance Evaluation of VANET network protocols, 2017
13	Husam Haqaf, Understanding the Most Key Skills for Information Security Managers: A Delphi Method Study, 2017
14	Haifa Alghool, Investigating Conformance of e-Goverment Web Sites in Libya to W3C Accessibility Standards, 2018
15	Basma Al-Brge, A Hybrid Method for Missing Value Imputation, 2019
16	Khalid Elatresh, University Students' Attitudes Towards Captcha Use, 2019

17	Abdulsalam Tayeb, A Literature Survey about Vertical and Horizontal Scalability in Cloud Computing, 2019
18	Saja Ahmed Ail-Bawi, Performance evaluation of IoT application layer protocols, 2020
19	Kutay Yıldız, Deep Learning-Based Face Recognition with Raspberry Pi and USB Accelerator for IoT Environments, 2021
20	Ftayem Binglaw, Security Issues in the Internet of Things: Requirements, Attacks and Countermeasures, 2021