Dr. S. ALPER SERT

Middle East Technical University (METU)
Department of Computer Engineering
Universiteler Mah. Dumlupinar Blv.
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Professional Experience

Data Architect
Supreme Headquarters Allied Powers Europe (S.H.A.P.E.)
North Atlantic Treaty Organisation (NATO)
2024 - present.

Visiting Lecturer
Department of Computer Engineering
National Defense University (NDU)
2022 - 2024.

Principal Engineer
Central Office
Ministry of National Defense
2021 - 2024.

Staff Officer
Supreme Headquarters Allied Powers Europe (S.H.A.P.E.)
North Atlantic Treaty Organization (NATO)
2018 - 2021.

Part-Time Instructor
Department of Computer Engineering
Middle East Technical University
2014 - present.

Senior Systems Engineer
Communications and Information Systems Division
Turkish General Staff
2012 - 2018 (academic leave).

Systems Engineer and Data Analyst
Communications and Information Systems Division
Turkish General Staff
2004 - 2012.

Education

Middle East Technical University
PhD, Computer Engineering.
2014-2018.
Dissertation: An Intelligent Fuzzy Clustering Approach for Efficient
Multi-Modal Object Classification in Wireless Sensor Networks.

Middle East Technical University
MSc, Computer Engineering.
2012-2014.
Thesis: An Efficient Fuzzy Fusion-Based Framework for Surveillance
Applications in Wireless Multimedia Sensor Networks.

Turkish Military Academy
B.Sc., Systems Engineering (EE Specialization).
2000-2004.

Research Interests

Wireless Sensor Networks.
Algorithms and Computational Intelligence.
Fuzzy Logic and Multimedia Communications.
Machine Learning (ML) & Artificial Intelligence (AI).

Teaching

Middle East Technical University
Department of Computer Engineering
CEng240, Programming with Python for Engineers , 2022 - 2024

National Defense University
Department of Computer Engineering
Computer Networks, 2022 - 2024

Middle East Technical University
Department of Computer Engineering
CEng230, Introduction to C Programming, 2014 - 2018

Honors and Awards

The Scientific and Technological Research Council of Turkey
Research and Development (R&D) Project Scholarship, 2015-2018

University Graduation
Listed among Top Ten Students, 2004

Highest Departmental GPA Award at Turkish Military Academy
GPA: 3.77/4.00, 2001

Listed among Top Ten Students at High School Graduation
GPA: 4.90/5.00, 2000

Science High School Admission Tests
Ranked in Top 100 Students, 1996
(roughly 1.5 million applicants nationwide)

Publications   "Journals"

S. A. Sert and A. Yazici. *An altitude-aware fuzzy approach for energy efficiency in UAV-assisted 3D Wireless Sensor Networks.* Applied Soft Computing, Vol.167, Part B, DOI:10.1016/j.asoc.2024.112424, Dec. 2024.

S. A. Sert. *An Effective and Secure Solution for Border Security – Blockchain Based Internet of Things.* The Journal of Defense Sciences, Vol.2, No.43, DOI: 10.17134/khosbd.1299598, Nov. 2023.

S. A. Sert and A. Yazici. *Increasing energy efficiency of rule-based fuzzy clustering algorithms using CLONALG-M for wireless sensor networks.* Applied Soft Computing, Vol.109, 107510, DOI:10.1016/j.asoc.2021.107510, Sep. 2021.

A. Yazici, M. Koyuncu, S.A. Sert and T. Yilmaz. *A fusion-based framework for wireless multimedia sensor networks in surveillance applications.* IEEE Access, Vol.7, pp. 88418-88434, DOI:10.1109/ACCESS.2019.2926206, 2019.

S. A. Sert, A. Alchihabi and A. Yazici. *A Two-Tier Distributed Fuzzy Logic Based Protocol for Efficient Data Aggregation in Multi-Hop Wireless Sensor Networks.* IEEE Transactions on Fuzzy Systems, Vol.26, No.6, pp. 3615-3629, May 2018.

S. A. Sert, H. Bagci and A. Yazici. *MOFCA: Multi-objective fuzzy clustering algorithm for wireless sensor networks.* Applied Soft Computing, Vol.30, pp. 151-165, DOI:10.1016/j.asoc.2014.11.063, May 2015.

T. Dokeroglu, S. A. Sert and M. S. Cinar. *Evolutionary Multiobjective Query Workload Optimization of Cloud Data Warehouses.* The Scientific World Journal, Vol. 2014, DOI: 10.1155/2014/435254, 16 Pages, 2014.

"**Conference Proceedings**"

O. Zorlu, A. Ozsoy, S. A. Sert. *A role-based access control management model on blockchain for restricted facilities: An airport example.* In Proc. of the 10th International Conference on Recent Advances in Air and Space Technologies (RAST), pp. 1-6, DOI:10.1109/RAST57548.2023.10197974, Istanbul, Jun 2023.

S. A. Sert. *A novel hybrid grey wolf optimization methodology for resource constrained networks.* In Proc. of the 30th Signal Processing and Communications Applications Conference (SIU), pp. 1-4, DOI:10.1109/SIU55565.2022.9864673, Safranbolu, May 2022.

Publications

"**Conference Proceedings Cont.**"

S. A. Sert and A. Yazici. *Optimizing the performance of rule-based fuzzy routing algorithms in wireless sensor networks.* In Proc. of the 2019 IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), pp. 1-6, New Orleans, 2019.

S. A. Sert, C. Fung, R. George and A. Yazici. *An Efficient Fuzzy Path Selection Approach to Mitigate Selective Forwarding Attacks in Wireless Sensor Networks.* In Proc. of the IEEE International Conference on Fuzzy Systems (FUZZ-IEEE), pp. 1-6, Naples, 2017.

S. A. Sert, A. Yazici and A. Cosar. *Effects of selective forwarding attacks on wireless sensor network efficiency.* In Proc. of 25th IEEE Signal Processing and Communications Applications Conference (SIU), pp. 1-4, Antalya, 2017.

S. A. Sert, A. Yazici and T. Dokeroglu. *Fuzzy processing in surveillance wireless sensor networks.* In Proc. of International Conference on Fuzzy Systems (FUZZ-IEEE), pp. 1509-1515, Vancouver, 2016.

T. Dokeroglu, M. S. Cinar, S. A. Sert and A. Cosar. *Improving Hadoop Hive Query Response Times Through Efficient Virtual Resource Allocation.* In Proc. of the Flexible Query Answering Systems (FQAS), pp. 215-225, 2016.

S. A. Sert, E. Onur and A. Yazici. *Security attacks and countermeasures in Surveillance Wireless Sensor Networks.* In Proc. of 9th International Conference on Application of Information and Communication Technologies (AICT), pp. 201-205, Rostov-on-Don, 2015.

S. A. Sert, A. Yazici and A. Cosar. *Impacts of routing attacks on surveillance wireless sensor networks.* In Proc. of the International Conference on Wireless Communications and Mobile Computing (IWCMC), pp. 910-915, Dubrovnik, 2015.

S. A. Sert, A. Yazici, A. Cosar and C. Yilmazer. *An Efficient Fuzzy Fusion-Based Framework for Surveillance Applications in Wireless Multimedia Sensor Networks.* In Proc. of the International Conference on Wireless Communications and Mobile Computing (IWCMC), pp. 767-772, Cyprus, 2014.

S. A. Sert, A. Yazici and A. Cosar. *Data Fusion and Processing in Wireless Multimedia Sensor Networks: An Analysis for Surveillance Applications.* In Proc. of 22nd IEEE Signal Processing and Communications Applications Conference (SIU), pp. 421-424, Trabzon, 2014.

T. Dokeroglu, S. A. Sert, M. S. Cinar and A. Cosar. *Designing Cloud Data Warehouses using Multiobjective Evolutionary Algorithms.* In Proc. of International Conference on Agents and Artificial Intelligence (ICAART), France, 2014.

Key Skills Machine Learning and Artificial Intelligence
Data Mining (Algorithm Research, Design and Application)
TSQL / PLSQL Programming (Query Tuning and Optimization)
Application Programming (C/C++/Delphi/C#/J2EE/ASP.NET/Python)
Operating Systems (MS Windows, Linux, Unix Distributions)
HADOOP Hive (Map/Reduce)
Prolog (swi), MATLAB
Project and Programme Management (ITIL/PRINCE2/MSP)
Risk Management (AXELOS MoR)
MATLAB, Prolog (swi-prolog).

Reviewer IEEE Transactions on Fuzzy Systems
IEEE Transactions on Network and Service Management
International Journal of Communications Systems
International Journal of Computer Systems Science and Engineering
Adhoc Networks
IEEE Sensors
IEEE Access
American Society of Science and Engineering
Turkish Journal of Electrical Engineering & Computer Sciences

Languages Turkish (Native),
English (Written & Oral Fluency),
German (Working Skills),
French (Beginner).