MAHMUT CAVUR

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EDUCATION

PhD Geodetic and Geographic Information Technology (GGIT)- Middle East Technical University   2016
MBA Management Business Administration - Hasan Kalyoncu University   2017
MA Management Information System (MIS)- Bogazici University   2012
BS Mining Engineering - Middle East Technical University   2009

Ph.D. Dissertation: "An Embedded Spatial Statistics Toolbox in Open Source GIS Software (uDig)," February 2016 (Advisor: Sebnem Duzgun).

RESEARCH GRANTS

ONGOING PROJECTS

1. Principle Investigator (PI), MIneSoft Informatics, TUBITAK 1507 R&D, Grant# 7151579, MIneTrack – Underground miners tracking system in real-time, 04/2017-Current, ($277k)
2. Postdoc Researcher, Colorado School of Mines - Department of Energy (DOE), EERE – Geothermal Technologies Program, Grant# 75D30119C05412, Digital Technologies Improve Mine Safety and Health, 08/2021-Current, (PI: S. Duzgun, $750k)

COMPLETED PROJECTS

1. Postdoc Researcher, Colorado School of Mines - Department of Energy (DOE), EERE – Geothermal Technologies Program, Grant# 75D30119C05412, Real-Time Friction Loss Estimation in Mine, 08/2021-08/2024, (PI: S. Duzgun, $750k)
2. Co-Investigator (Co-PI), Kadir Has University – TUBITAK 1001 The Scientific and Technological Research Projects Funding Program, Grant# 119K333, In the context of urban-rural continuity, Web-GIS-based Integrated Site Management Model for historic cities: The Case of İznik, 09/2019-12/2022, (PI: Y. Erkan, $135k)
3. Postdoc Researcher, Colorado School of Mines - Department of Energy (DOE), EERE – Geothermal Technologies Program, Grant# 010628170, Detection of Potential Geothermal Exploration Sites from Hyperspectral Images via Deep Learning, 08/2019-08/2020, (PI: S. Duzgun, $500k)
4. Researcher, Ozyegin University - Joint Operational Programme "Black Sea Basin 2007-2013, Black Sea Industrial Symbiosis Platform, 2011-2013, (PI: P. Ozuyar, $30k)
5. Co-Investigator (Co-PI), MIneSoft Informatics, ERA.Net RUS Plus, Grant# 9140068, SEN4RUS-Exploiting Sentinels for supporting urban planning applications at Russia's city and regional levels, 04/2012-06/2014, (PI: N. Chrysoulakis, $150)
6. Co-Investigator (Co-PI), Kuzgun Informatics and Middle East Technical University, ERA.Net RUS, Grant# 12930, GEOURBAN - ExploitinG Earth Observation in sUstainable uRBan plAnning & management, 07/2015-06/2018, (PI: N. Chrysoulakis, $152)
7. Principle Investigator (PI), MIneSoft Informatics, KOSGEB Industrial Development and Implementation, Grant# 2015-7, BDTS – Semi-Automatic Underground Mineral Tracking System with Computer Support, 02/2016-12/2017, ($207k)
8. Principle Investigator (PI), MIneSoft Informatics, KOSGEB R&D, Grant# 1847, BDTS – Semi-Automatic Underground Mineral Tracking System with Computer Support, 2012-2015, ($207k)
9. Principle Investigator (PI), Kuzgun Informatics and Middle East Technical University, KOSGEB R&D, Grant#, Developing an Open Source/Free Software for Reclamation of Mine Site Area, 2011-2013, ($150k)

SUBMITTED PROJECTS PROPOSALS

1. Co-Investigator (Co-PI), Colorado School of Mines - NGA (DOE), Advancing the State of Practice in SAR Data Applications in Environmental Monitoring through Synergistic Interaction of Education and Research, (PI: W. Zahou, $2.5M)

2. Principle Investigator (PI), I-Cors for National Hub – Business Canvas Development, Real-Time Tracking System for Indoor Using Smart Sensors ($50k)
3. Principle Investigator (PI), Nexus (NREL-MINES - Proposal to be submitted to DOE/EDF), Detection of Carbon and Methane Emissions Using Remote Sensing Technology
4. Principle Investigator (PI), TUBITAK 1507 R&D, Detection of Potential Geothermal Exploration Areas from Hyperspectral Images via Deep Learning (75k$)

WORK EXPERIENCE

COLORADO SCHOOL OF MINES

Adjunct Faculty I 2024-Present

- Taught two courses (Big Data Analytics, and Applied Remote Sensing)
- Supervised master and PhD students (8-10 students)
- Administrated system security of the VR Lab (2 servers: Linux and Windows and 2 databases: RDBMS and Geospatial DB)
- Published 6 journals publications in 2024

Visiting Researcher I 2020-2024 (3 years)

- Analysed satellite images (Aster, Landsat, Sentinels, ERS, HyMap, Lidar, hyperspectral)
- Developed ML/AI algorithms: CNN, SOM, KNN
- Analysed MIS, GIS, and Remote Sensing (RS) data
- Performed statistical analysis of geospatial big data
- Managed two projects together with PI
- Developed new 3 new project proposals
- Managed the VRLab hardware (Laser Camera, Linux HPC, Hyperspectral Camera and Lidar Camera, etc.) and software (PostGreSQL and Geospatial Database, Tableau, SPSS, MATLAB, ENVI, RStudio, QGIS, ArcGIS, PyCharm, Anaconda Python Environment, Leapfrog, etc.) and security
- Published 4 journal publications and 1 conference proceeding
- Advised 3 PhD and 5 Master students
- Generated quarterly reports to DOE
- Trained 10 master's and Ph.D. students about network infrastructure, PostGreSQL and Geospatial Database, projects in the VRLab

KADIR HAS UNIVERSITY
Faculty member (Assist. Prof.) I 2017-2023 (6 years)
- Advised undergraduate and graduate students with their project and thesis (10-15 master and PhD students)
- Taught 2-3 courses per semester about MIS, LBS, DBMS, Data Analytics, Business Analytics, Computer Science, and FIS
- Developed 2 grant proposals (1 project as a PI and one as a researcher)
- Administered Sparks SAP and faculty website
- Served as coordinator for Erasmus student exchange program between Turkey and EU
- Confounded 2 new departments: Cybersecurity and Data Analytics
- Developed 2 new curriculums: "Security of the Location-based Services" and "Geospatial Big Data analytics"
- Taught and advised Business Information Analytics students

MINESOFT INFORMATICS
Founder and General Manager I 2012-Present (13 years)
- Secured grants and 10-15 institutional partners from EU, Russia, and the Middle East
- Developed over 25 project proposals, 10 accepted for almost $1Million in total
- Worked with over 100 industry customers

- Trained over 100 employees in Cybersecurity, GIS, RS, Network infrastructure
- Maintained network infrastructure and cybersecurity

KUZGUN INFORMATICS
R&D, General Manager and Investor I 2010-2022 (12 years)
- Developed 4-5 IS and IT systems for customers
- Secure grants and partners
- Developed over 10 project proposal
- Worked with over 10 municipalities
- Trained over 200 people professionals in Network infrastructure
- Trained over 100 employees in Projects, Cybersecurity, GIS, RS, Network, infrastructure
- Maintained network infrastructure and cybersecurity

BOGAZICI UNIVERSITY
Research Assistant I 2011-2011 (3 months)
- Completed master thesis at the information processing center, supported by the Boğaziçi University as part of Turkish Scientific Research Project Program (Thesis Title: Diffusion of GIS at Municipalities of Istanbul)
- Managed IT infrastructures for the information processing center

ESRI TURKEY
Project Engineer I 2010-2010 (3 months)
- Managed Web-based City Information System
- Managed the Archive Information System
- Managed network infrastructure
- Managed database management system

PUBLICATIONS

Journal Publications (Indexed - 14 total):

- Ulu, D.P., Erkan, Y., Reis, A. S. A., Guvenc, H. M. and **Cavur, M.**; Impacts of the changes in agriproduction on rural heritage in the case of Müşküle, Iznik, Turkey. *Journal of Cultural Heritage Management and Sustainable Development* 2025; https://doi.org/10.1108/JCHMSD-01-2024-0021

- Arpa, T., & **Çavur, M.** (2024). A Comparative Analysis of Machine Learning Techniques to Explore Factors Affecting Mathematics Success in Developing Countries: Turkey, Mexico, Thailand, And Bulgaria Case Studies. Journal of Information Systems and Management Research, 6(2), 24-36. https://doi.org/10.59940/jismar.1514958

- Ibrir, Y. A., & **Çavur, M.** (2024). Forecasting Employees' Promotion Based on Personal Indicators by Using a Machine Learning Algorithm. International Journal of Management Information Systems and Computer Science, 8(2), 75-98. https://doi.org/10.33461/uybisbbd.1471499

- Demir, E., **Cavur, M.**, Yu, Y.-T., & Duzgun, H. S. (2024). An Evaluation of AI Models' Performance for Three Geothermal Sites. Energies, 17(13), 3255. https://doi.org/10.3390/en17133255

- **Cavur, M.**, Ting, Yu, Demir, Ebubekir; Duzgun, H.S. (2024). Mapping Geothermal Indicator Minerals Using Fusion of Target Detection Algorithms. Remote Sens. 2021, 13, 349., Nevada—USA. https://doi.org/10.3390/rs16071223

- Songülen, N., Alkan, Güvenç, M., A., Alioglu, Fuzun., Erkan, Y., and **Cavur, M.** (2024). A decision support system for conservation policy development: The socio-demographic profiling of İznik town and its rural landscape. Historic Environment Policy and Practice. https://doi.org/10.1080/17567505.2024.2331297

- **Cavur, M.** and Demir, E. (2022). RSSI-Based Hybrid Algorithm for Real-Time Tracking in Underground Mining by Using RFID Technology, Physical Communication. https://doi.org/10.1016/j.phycom.2022.101863

- Moraga, J., Duzgun, H.S., **Cavur, M.**, and H.S., Soydan, (2022). The Geothermal Artificial Intelligence for geothermal exploration. Renewable Energy, Volume 192, Pages 134-149. https://doi.org/10.1016/j.renene.2022.04.113

- **Cavur, M.**, Moraga, J., Duzgun, H.S., Soydan, H. and Jin, G. (2021). Displacement Analysis of Geothermal Field Based on PSInSAR And SOM Clustering Algorithms A Case Study of Brady Field. Remote Sens. 2021, 13, 349., Nevada—USA. https://doi.org/10.3390/rs13030349

- Camalan M. and **Cavur M.** (2020). Development of a supervised classification method to construct 2D mineral maps1on backscattered electron images. Turkish Journal of Electrical Engineering & Computer Sciences. DOI: https://doi.org/10.3906/elk-1906-60

- M., Camalan, **Cavur M.** M., & C., Hoşten, (2017). Assessment of chromite liberation spectrum on microscopic images by means of a supervised image classification. Powder Technology, 322, 214-225. https://doi.org/10.1016/j.powtec.2017.08.063

- **Cavur, M.**, & Duzgun, H. S. (2016). A framework to embed a spatial statistics toolbox in open-source GIS software: kernel density estimation example. Journal of Spatial Science, 62(1), 173–193. https://doi.org/10.1080/14498596.2016.1230837

- Camalan, M., & **Çavur, M.** (2021). Using Random Forest Tree Classification for Evaluating Vertical Cross-Sections inEpoxy Blocks to Get Unbiased Estimates for 3D Mineral Map. Politeknik Dergisi, 24(1), 113-120. https://doi.org/10.2339/politeknik.602688

- **Çavur, M.** (2018). Yeraltı Maden İşçilerini Gerçek Zamanlı Takip Etmek İçin RFID Teknolojisine Dayalı Özgün Bir Entegrasyon Metodolojisi. Politeknik Dergisi, 21(3), 603-610. https://doi.org/10.2339/politeknik.391793

Journal Paper (Other – 1 total):

- Cavur, M., & Yılmaz, C. (2016). Madenlerde Yazılım ve İş Güveliği. Mimar ve Mühendis. Sayı 88, Sayfa 70-71, Nisan 2016.

Conference Paper (16 total):

- Hayytbayev, G., Küçük, K., & **Çavur, M.** (2024, October). A robust microservices framework for indoor tracking system development. In Proceedings of the 2024 9th International Conference on Computer Science and Engineering (UBMK). https://doi.org/10.1109/UBMK63289.2024.10773474

- Umar, N.A., and **Cavur, M.** (2022). Implications and Impacts of Growing Technology-Metaverse Technologies. Sivas International Conference on Scientific and Innovation Research. Sivas Technology University, October 13-15, 2022. Sivas-Türkiye.

- **Cavur, M.**, Moraga, J., Duzgun, H. S., Soydan, H., & Jin, G. (2021). The DInSAR Analysis with Machine Learning for Delineating Geothermal Sites at the Brady Geothermal Field.
- **Cavur, M.** and Demir, E. (2019) RSSI-Based Hybrid Algorithm for Real-Time Pedestrian Tracking In Indoor Environments By Using RFID Technology. 6th International Management Information Systems Conference. 10-12 Oct 2019, Istanbul, Turkey.
- Akdur, C., and **Cavur, M.** (2019) Customer' Adoption of Location-Based Application A case study on 'FEED ME CYPRUS' mobile food ordering application in Northern Cyprus. 6th International Management Information Systems Conference. 10-12 Oct 2019, Istanbul, Turkey.
- **Cavur, M.** and Richard, M.D. (2019) Location-Based Information System_Proposed Framework of LBS Application. th International Management Information Systems Conference. 10-12 Oct 2019, Istanbul, Turkey.
- **Cavur, M.**, et al. "LAND USE AND LAND COVER CLASSIFICATION OF SENTINEL 2-A: ST PETERSBURG CASE STUDY." International Archives of the Photogrammetry, Remote Sensing & Spatial Information Sciences (2019).
- **Cavur, M.**, Camalan, M., Ketizmen, H., and Ağıtoğlu, S., "Sentinel-1 Sar Verileri Kullanilanarak Maden Kaymalarini ve Deformasyonlarini Izleme [MONITORING of MINE LANDSLIDE and DEFORMATION USING SENTINEL-1 SAR DATA]," 2019.
- Akdur, G., Tanova, C., and **Cavur, M.** (2018) Technology Acceptance in Turkish Republic of Northern Cyprus Public Healthcare: An Empirical Study on Physicians' Interactions with Electronic Health Record (EHR) Systems in State Hospitals. 9. Uluslararası Sağlık ve Hastane Yönetimi Kongresi, Belek, Antalya, Turkey.
- Aktas, B. and **Cavur, M.** (2018) Survey of Indoor Positioning Technologies. International Congress of Science, Education and Technology Research. 2018, Ukraine.
- **Çavur, M.**, & Demir, Ebübekir.(2017) "Methodology of Localization of Moving Objects Using RFID Technology in Indoor Environments". 25th SIGNAL PROCESSING AND COMMUNICATIONS APPLICATIONS CONFERENCE, 2017. Antalya, Turkey.
- N. Chrysoulakis, M. Marconcini, A. Sazonova, A. Tal, S. Dusgun, E. Parl, Charalampopoulou, Z. Mitraka, T. Esch, **M. Cavur** and C. Feigenwinter. Copernicus Sentinels for Urban Planning in Russia - The SEN4RUS Project. 4th International Conference on Countermeasures to Urban Heat Island (IC2UHI) 31 May 2016, Singapore.
- **Cavur, M.,** Kemec, S., Nabdel, L., abd Sebnem Duzgun, H., "An evaluation of land use land cover (LULC) classification for urban applications with Quickbird and WorldView2 data," Urban Remote Sensing Event (JURSE), 2015 Joint, vol., no., pp.1,4, March 30, 2015-April 1, 2015.
- **Çavur, M.**, Özturan, M., Karaduman, C., & İçli, A. B. (2015). "DIFFUSION OF GIS AT MUNICIPALITIES IN İSTANBUL". In IMCET, April 14-17, 2015.
- **Cavur, M.**, Duzgun, S., H. Geospatial and NonGeospatial Analysis of Trafic Accident Data A Case Study. 6. Karayolu Trafik Güvenliği Sempozyumu ve Sergisi. Ankara. November 2015.
- Chrysoulakis, N., Esch, T., Parlow, E., Düzgünd, S. H., Tal, A., Sazova, A., Feigenwinter, C., Triantakonstantis, D., Marconcini, M. and **Cavur, M.**, 2013. "The role of EO in sustainable urban planning and management: the GEOURBAN approach". In Proceeding of the RSCy2013: First International Conference on Remote Sensing and Geoinformation of Environment, held in Pafos, Cyprus, April 8 - 10.

Conference Poster (1 total):

- N. Chrysoulakis, M. Marconcini, A. Sazonova, A. Tal, S. Dusgun, E. Parl Charalampopoulou, Z. Mitraka, T. Esch, **M. Cavur** and C. Feigenwinter. Poster Session presented at Mapping Urban Areas from Space – MUAS 2015; 04-05 November 2015; Frascati, Italy.

Ph.D. Dissertations Supervised (1 total):
- Machine Learning in duplicate ad detection at online real estate platform under multiple constraints (Elif Kozak, 2025)

Ms. Theses Supervised (4 total):
- Developing A Scalable Solution for Confined Space Monitoring Systems: A Mine Example (Gaffur Haytbayev, 2025)
- A Comparative Analysis of Machine Learning Techniques to Explore Factors Affectings Mathematics Succes in Developing Countries: Turkey, Mexico, Thailand and Bulgaria Case Studies (Tuba Arpa, 2023)

- Forecasting Employees' Promotion Based on The Personal Indicators by Using a Machine Learning Algorithm (Yasmine Aya İbrir, 2022)

RSSI-Based Hybrid Algorithm for Real-Time Pedestrian Tracking In Indoor Environments By Using RFID Technology (Ebubekir Demir, 2018)

COURSES TAUGHT

Courses	Semester	Organization	Degree	Students Evaluations
IT-413: Geographic Information Systems	Spring 2017/2018 Spring 2018/2019	Kadir Has Unv.	Bs	4.1/5.0
MIS603: Location-Based Services	Spring 2017/2018 Spring 2018/2019 Spring 2020/2021 Spring 2022/2023	Kadir Has Unv.	Ms/PhD	4.9/5.0
MIS103: Introduction to Computing	Fall 2018/2019 Fall 2019/2020 Fall 2021/2022 Spring 2022/2023	Kadir Has Unv.	Bs	4.4/5.0
MIS201: Foundation of Information Systems	Fall 2018/2019 Spring 2018/2019 Spring 2022/2023	Kadir Has Unv.	Bs	4.3/5.0
MIS511: Management Information Systems	Fall 2018/2019 Fall 2019/2020 Spring 2020/2021 Spring 2021/2022 Fall 2022/2023	Kadir Has Unv.	Ms/PhD	4.6/5.0
IT572: Advanced Information System Analysis and Design	Spring 2021/2022 Fall 2022/2023	Kadir Has Unv.	Ms/PhD	4.4/5.0
MIS400: Project Design	Fall 2018/2019 Fall 2019/2020 Fall 2020/2021 Fall 2021/2022 Fall 2022/2023	Kadir Has Unv.	Bs	4.9/5.0
IT-D 248-Advanced Geospatial Database Management Systems	Spring 2018/2019	Kadir Has Unv. Colorado School of Mines	Professionals	
MIS651: Principles Of Geospatial Information Technologies	Fall 2021/2022 Spring 2024/2025	Kadir Has Unv. Colorado School of Mines	PhD	3.7/5.0
IT-D 131 – GIS Project Design and Management	2017-2023	Sahara Group	Professionals	N/A
IT-D 255: Database Management with PostGIS	2017-2023	Sahara Group	Professionals	N/A
ITC 302 – Project Management	2017-2023	Sahara Group	Professionals	N/A
ITC 501 – Data Analytics	2017-2023	Sahara Group	Professionals	N/A
GEGN – Applied Remote Sensing	Spring 2024/2025	Colorado School of Mines	Ms/PhD Professionals	-
MNGN502A- Geospatial Big Data Analytics	Spring 2024/2025	Colorado School of Mines	Ms/PhD	-

COURSES TAUGHT AT STONEHILL COLLEGE

DAN 609 - Python for Data & Analytics	Fall 2025/2026	Stonehill College	MBA	NA
DAN 604- Database & Data Warehouse Concepts	Fall 2025/2026	Stonehill College	MBA	NA

INTRAMURAL SERVICES
- Departmental Service:
    - Administered the Faculty Web (Responsible for design, content, security and development)
- University Service:
    - Served as coordinator for Erasmus student exchange program between Turkey and EU
    - Administered the SPARK (SAP) System (Responsible for design and content)
    - Search Committee Member

EXTRAMURAL SERVICES
- Conferences Organized:
    - Management Information Systems Conference (IMISC) 2019
- Manuscript Reviewerships:
    - Reviewer for the following journals:
        - IEEE Access
        - IEEE Sensors Journal
        - Physical Communication
        - RECENT PATENTS ON MECHANICAL ENGINEERING
        - Asian Journal of Current Research
        - The Extractive Industries and Society
        - Journal of Location Based Services
        - Remote Sensing
        - Advanced GIS
        - TJGIS
        - International Journal of Medical Informatics
        - Journal of Geography, Environment and Earth Science International
        - Earth Science Informatics
        - Environmental Monitoring and Assessment
    - Reviewer for the following conferences:
        - IMCET
        - ICISE
- Editorial Positions:
    - Guest Editor (Electronic), https://www.mdpi.com/journal/electronics/special_issues
    - Editorial Board Member (Advanced GIS), https://publish.mersin.edu.tr/index.php/agis/about/editorialTeam
    - Editorial Board Member (Turkish Journal of Geographic Information Systems), https://dergipark.org.tr/en/pub/tucbis/board
    - Membership, Association for Information Systems (AIS)
    - Membership, Society for Mining, Metallurgy & Exploration

CERTIFICATES
1. Java
2. DBMS: PostGreSQL and ArcGIS Geospatial
3. Headwall Hyperspectral Camera
4. NVIDIA GPU/CPU
5. Applied Technology Commercialization Program (ATCP)
6. Project Management
7. ENVI (SarSCAPE)
8. Data Analytics

SKILLS

Programming Languages:	Java, Python, MATLAB, RScript, MapBasic.
Project Management:	Jira, Trello, Github, Excel
Developing Tools:	Intellij IDEA, Visual Studio, Eclipse, NetBeans, Mingv, RCP.
Data Science:	Java, Python, MATLAB, RScript, MapBasic, Excel.
Statistics:	MATLAB, R, SPSS, KNIME, Tableau, PowerBI.
Database:	Oracle, AccesDB, MYSQL, PostgreSQL, String, Hibernate.
Network:	TCP-IP.
Image Analysis:	Erdas, ENVI, MATLAB, InterImage, ImageJ, Fiji, Clemex, SNAP, SARPROZ.
System Architecture:	SOA.
Operating System:	Windows, Linux.
Geographic Information System:	ArcGIS, MapInfo, uDig, QGIS, SpaceStat, gvSIG, DIVA-GIS, TNT-Mips, RScripts.
CAD-Systems:	Cadkey, Key Creator.
Hardware:	Headwall hyperspectral imaging camera (swir), laser camera
Mining and Rock Stability:	Surpac, Micromine, Slide, Phase2, Paraview.
Geothermal:	LeapFrog, Paraview.

HONORS & AWARDS

- **NSF-ICorps Nomination**   **Sep 2024**

Nominated for Business Canvas Development for Indoor Tracking System Project ($50k secured)

- **Finalist of the New Ideas New Jobs (YFYİ) - Turkey**   **Jul 2012**

Finalist in the YFYİ competition, selected from over 1,600 projects. Project: "Real-Time Positioning of Employees in the Indoor Environment"

- **Nexus Consortium for Natural Resources Exploration Using ML/AI - Brasil**   **Jul 2019**

Finalist in the Nexus competition with the ML and AI for Geothermal Prediction