Yunus Serhat Bicakci, PhD

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Researcher

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As a researcher with a PhD, I specialise in leveraging big data, machine learning, deep learning, and geospatial analytics to solve complex real-world problems. My expertise includes spatial and spatiotemporal analyses, remote sensing through satellite imagery, and the integration of geographic information systems with advanced artificial intelligence models. I have practical experience with cloud platforms and am proficient in data analysis and deep learning frameworks. Recently, my research has expanded into Vision-based Large Language Models and Multimodal AI, exploring innovative solutions at the intersection of AI and geospatial data science.

EDUCATION

PhD Geographical Information Technologies, Istanbul Technical University MSc Management Information Systems, Sakarya University BA Business Administration, Anadolu University		07/2021 07/2013 06/2011
Programming Languages	Python (strong), R (good), SQL (good)	
Soft Skills	Leadership, Supporting, Communication, Problem-Solving, Time Management, Creativity	
Libraries	PyTorch, Tensorflow, Transformers (Vision Transformers), Pandas, GeoPandas, Numpy, Gra	dio, Streamlit
Tools	Git, Docker, HPC, GCP, PostgreSQL, QGIS, ArcGIS	
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EXPERIENCE

Assistant Professor Web Page Marmara University, Istanbul – Türkiye	01/2025 — Present
Research Software Engineering Scientist (Affiliate) Web Page University of Glasgow Glasgow – UK	2024 — Present
Research Asssociate University of Glasgow Glasgow – UK	2024 — 2024
Affiliate Academic Web Page University College London (UCL) London – UK	2023 — 2024

LATEST PROJECTS

Multi-Lingual and Multi-Modal Location Information Extraction: Working on the this project in collaboration with Th Institute and DSO National Laboratories, focusing on the development of a novel approach for geolocalization using N Large Language Models (MLLMs) and Retrieval-Augmented Generation (RAG) techniques. Achieved state-of-the-art str	e Alan Turing Iultimodal eet-level
geolocalization accuracy (1 km) on benchmarks datasets.	2024
Interactive Crime Mapping with Big Data: Led the development of a cloud-based interactive crime mapping applicati	ion.
Integrated spatiotemporal datasets from the London Metropolitan Police and geo-tagged tweets to produce real-time	
visualizations of crime patterns. Enabled dynamic user interactions, including datasets uploads and analyses.	2023
Semantic Segmentation Model for Building Segmentation: Developed a novel deep learning framework, ATTransUNe	et, combining
Attention Gated Networks and TransUNet for precise building segmentation using aerial imagery and LIDAR data. Ach	ieved
competitive IoU and BIoU scores (IoU: 0.7551, 0.8555; BIoU: 0.5613, 0.7127) in the MapAI competition.	2023
Certificates	
TensorFlow Developer Certificate – Issued by: TensorFlow Certificate	2022 - 2025
Google Machine Learning Bootcamp Turkey – Study time: 5 months – Google Developers & inzva Certificate	2022
Deep Learning Specialization – Issued by: DeepLearning.AI Certificate	2022
Grants/Funding	
The Alan Turing Institute & DSO National Laboratories. (Researcher)	2024 - 2024
TUBITAK 2219 - Postdoctoral Research Fellowship. (Principal Investigator)	2023 - 2024
LATEST PUBLICATIONS	
Big Data and Social Media Analytics: Opportunities for Interactive Crime Mapping Yunus Serhat Bıçakçı, Alina Ristea	i, Kate
Bowers. New Research in Crime Modeling and Mapping Using Geospatial Technologies, edited by Michael Leitner, Geote	echnologies
and the Environment series. DOI	2025
Performance comparison of vision-language models in classifying Turkish dishes Yunus Serhat Bıçakçı. Journal of th	e Faculty of
Engineering and Architecture of Gazi University / in preparation	2025
Street-Level Geolocalization Using Multimodal Large Language Models and Retrieval-Augmented Generation Yunus	s Serhat
Bıçakçı, Joseph Shingleton, Anahid Basiri. Journal of Visual Communication and Image Representation / in review	2025
CNN and Transformer U-Nets in Multiple Sclerosis Lesion Segmentation: A Comparative Assessment Beytullah Sarie	ca, Yunus
Serhat Bıçakçı, Dursun Zafer Şeker. Biomedical Signal Processing and Control / in review	2025
ATTransUNet: Semantic Segmentation Model for Building Segmentation from Aerial Image and Laser Data. Yunus S	Serhat
Bıçakçı, Beytullah Sarıca. Nordic Machine Intelligence, 2(3).	2023