Cengiz Avcı

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Geospatial Data Scientist

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I am a Data Scientist with expertise in geospatial data, computer vision, and remote sensing. I completed my Bachelor's degree in Geomatics Engineering and earned my Master of Science in Satellite Communication and Remote Sensing from Istanbul Technical University in January 2025. My thesis focused on Transformer and CNN based semantic segmentation for land use analysis, and a conference paper derived from this work has been published. With a strong foundation in artificial intelligence and a proven track record of research, my aim is to apply data-driven technologies to advance both academic inquiry and industry practice, with particular emphasis on addressing climate-related challenges and contributing to global sustainability.

TECHNICAL EXPERIENCE

Founding Engineer   **March 2025 — Present**
GlobeHolder AI   *Remote, France*

- Currently developing transformer-based geo-foundation models at Globeholder.

Geospatial Data Scientist   **June 2023 — February 2025**
Doktar (İTÜ ARI3 Teknokent - Netherlands Wageningen University)   *Istanbul, Turkey*

- Conducted crop classifications using ensemble machine learning models on big geospatial data.
- Developed a production dashboard for crop classification results using Streamlit.

Machine Learning Engineer (Freelance)   **March 2023 — June 2023**
FarmOn   *Remote, Netherlands*

- Trained a crop classification model using the autogluon library on Microsoft Planetary computers, utilizing yearly NDVI (Normalized Vegetation Index) values.
- Developed a climate resemblance application to analyze and compare current climate conditions with future climate projections across different locations.

Research Assistant   **November 2021 — March 2023**
UrbanOccupationsOETR Project, Koç University   *Istanbul, Turkey*

- Created multiple segmentation datasets from historical aerial and satellite images spanning 1950 to 1970.
- Utilized PyTorch segmentation models to extract roads and segment land use/land cover (LU/LC) from historical maps.

SKILLS

Programming	Python, R, JavaScript
Tools	PyTorch, Docker, SQL, HuggingFace, AWS, Azure, Google Earth Engine, Streamlit, ArcGIS, QGIS
Research	Data Science, Computer Vision, Transformers, NLP, Remote Sensing, Agriculture
Certificates	(Click to see my Certificates in LinkedIn)

EDUCATION

Master of Science in Satellite Communication and Remote Sensing, *Istanbul Technical University* **February 2022 - January 2025**
Bachelor of Science in Geomatics Engineering , *Istanbul Technical University* **2017 - January 2022**

RESEARCH - ARTICLES

Transformer Based Land Use and Land Cover Segmentation   **July 2024**
Conference Paper - 9th Advanced Engineering Days   *Published*

- Authors: Cengiz Avcı, Prof. Dr. Elif Sertel

Deep Learning-Based Land Use Land Cover Segmentation of Historical Aerial Images   **July 2023**
IGARSS - IEEE International Geoscience and Remote Sensing Symposium   *Published*

- Authors: Cengiz Avcı, Prof. Dr. Elif Sertel, Dr. M. Erdem Kabadayı

Deep Learning Based Road Extraction from Historical Maps   **March 2022**
IEEE Geoscience and Remote Sensing Letters   *Published*

- Authors: Cengiz Avcı, Prof. Dr. Elif Sertel, Dr. M. Erdem Kabadayı

Comparison Between Random Forest and Support Vector Machine Algorithms for LULC Classification   **August 2021**
International Journal of Engineering and Geosciences - DergiPark   *Published*

- Authors: Cengiz Avcı, Muhammed Budak, Nur Yağmur, Assoc. Prof. Filiz Bektaş Balçık

REFERENCES

- **Prof. Dr. Elif Sertel** email: elifsertel@gmail.com website: web.itu.edu.tr/sertele
- **Prof. Dr. Esra Erten** email: eerten@itu.edu.tr website: avesis.itu.edu.tr/eerten