

Kaan Hacihaliloglu

About Me

Creative AI Engineer with a strong foundation in physics and machine learning. Passionate about designing deep learning solutions and playing with advanced algorithms to solve problems.

Experience

2020–2022 **Research Assistant**, *Bogazici University*

Developed advanced machine learning algorithms for seismic data analysis by employing transformer-based architectures and comprehensive feature engineering to enhance earthquake detection. Contributed to high-impact research (arXiv:2407.18402) and mentored a team of five junior researchers.

2021–2022 **Teaching Assistant**, *Bogazici University*

Led interactive QA sessions for Numerical Methods, emphasizing practical applications of NumPy, SciPy, and Matplotlib. Enhanced student learning through hands-on problem solving and clear explanations.

Aug 2022–Jul 2023 **Intern, Data Analytics & Process Mining**, *Allianz TR*

Data Analytics & Process Mining Intern at Allianz TR. Enhanced data-driven efficiency. Automated Excel reporting (Python/SQL), integrated databases, dynamic dashboards (operational insights/visibility). Optimized business processes (Celonis), dashboards (operational visibility). Streamlined workflows, boosted business intelligence.

Jul 2023–Sep 2023 **AI Engineer Intern**, *Live The World*

Engineered a robust content generation pipeline leveraging state-of-the-art NLP tools. Enhanced web scraping capabilities and refined Python solutions to support AI-driven applications.

08/2024–Present **AI Engineer**, *Diktatorial Suite*

Architecting and deploying sophisticated audio-based machine learning models for source separation, classification, and event detection. Spearheading end-to-end AI solutions with a Django backend and real-time inference integration via JavaScript. Currently developing AI agents to further advance audio processing.

Education

2018–2023 **B.Sc. in Physics**, *Bogazici University*

Graduated with a GPA of 3.04. Completed rigorous coursework in Physics, specially Quantum Physics and General Relativity and Machine Learning, while leading the Science Club.

2023–2024 **M.Sc. in Computer Science**, *University of Padua*

Advanced coursework in Artificial Intelligence and Deep Learning, providing a strong theoretical foundation essential for my career in applied AI engineering. This program honed my skills in deep learning architectures, algorithmic problem-solving before I pursued opportunities for practical application.

2025– **M.Sc. in Data Science**, *Sabanci University*

Currently enrolled, specializing in advanced Deep Learning and Statistical Analysis to further my expertise in data-driven innovation and research. This program is strategically chosen to deepen my skills in Computer Vision and more research experience.

Projects

- **Earth-ML**: Enhanced time series classification using advanced modeling techniques.
- **TÜBİTAK 2209-A**: Developed a high-precision earthquake detection model through innovative feature engineering.
- **”Burası” Art Exhibition**: Merged seismic data with artistic representation, creating a unique fusion of art and science.
- **Kaggle Competition**: Achieved 8th place in the Türkiye İş Bankası ML Challenge 5 by applying effective feature engineering strategies.
- **Datathon AI**: Secured third place in a Datathon AI competition focused on computer vision challenges.
- **NLP News Summarization**: Conducted a comprehensive evaluation of summarization models, comparing architectures like BART and T5 to assess performance and efficiency.

Skills

- **Programming**: Python, SQL, JavaScript, TypeScript
- **Version Control**: Git
- **Web Development**: Django, FastAPI, Celery
- **Machine Learning**: XGBoost, CatBoost, LightGBM
- **Deep Learning**: PyTorch, TensorFlow
- **AI Techniques**: OpenAI API, LangChain, LangGraph, Transformers
- **Libraries**: NumPy, SciPy, Matplotlib

Certifications

- **Quantum Computing (Bronze)**: QTurkey
- **Excellence in Audio Course**: Hugging Face
- **Process Mining**: Celonis Academy
- **Building RAG Agents**: NVIDIA Deep Learning Institute