

Turan Büyükkamacı

Berlin, Germany | +49 176 7036 1028 | turancancontact@gmail.com
turancamb02.github.io | github.com/turancamb02 | linkedin.com/in/turanbuyukkamacı

EDUCATION

- 10/2023 – 04/2026 **MSc Data Analytics**, Berlin School of Business and Innovation, Berlin
Thesis: “Cooperating AI Agents for Real-Time Prediction and Joint Adaptation in 5G Testbeds” (Fraunhofer FOKUS)
- 09/2018 – 06/2024 **BSc Electrical Engineering**, Istanbul Technical University, Istanbul
GPA 3.07/4.00 | Thesis: “High-Precision Battery State of Charge Prediction Models: A Comparative Analysis”
- 09/2018 – 06/2024 **BSc Mineral Processing Engineering**, Istanbul Technical University, Istanbul
GPA 3.07/4.00 | Thesis: “Computer Aided Calculation of Ore Preparation Processes”

PROFESSIONAL EXPERIENCE

- 02/2025 – 04/2026 **Fraunhofer FOKUS** Berlin, Germany
AI/ML Researcher (Studentische Hilfskraft)
- Built an LLM-based multi-agent coordination framework for adaptive 5G network parameter tuning, validated across 50+ stress scenarios and diverse topologies using AI-RAN-Sim.
 - Designed a closed-loop optimisation framework comparing reactive, predictive, and joint UE-gNB adaptation strategies.
 - Implemented agent-to-agent (A2A) communication protocols for autonomous telecom network control, enabling coordinated decision-making across distributed LLM agents.
 - Developed reproducible ETL pipelines and TensorBoard-instrumented training workflows for large-scale simulation campaigns in a publicly funded research environment.
 - Built a satellite tracking utility using the SGP4 propagation model to compute real-time Doppler shift, free-space path loss, and propagation delay from live TLE data.
 - Designed interactive network data visualisation dashboards using Plotly Dash.
 - **Top 10 finish**, ITU AI for Good: Large Wireless Models Challenge (5G/6G track).
- 10/2023 – 09/2024 **bunq B.V.** Istanbul, Turkey
Operations Agent
- Investigated high-volume payment and fraud cases using structured data analysis; maintained 95% customer satisfaction score.
 - Reduced repeated disputes by 20% through pattern identification and systematic process improvements.
- 09/2022 – 10/2023 **Schneider Electric** Istanbul, Turkey
Data Analyst - Inside Sales (Working Student)
- Engineered automated customer re-engagement pipelines using Python and Apache Airflow, optimizing lead reactivation rates by 15%.
 - Developed scalable data visualizations in Tableau integrated with Salesforce CRM, improving the precision of sales forecasting by 25
 - Led EV charging business development, generating over EUR 200K in project proposals.
 - Automated customer re-engagement pipeline in Python/Airflow, achieving 15% customer reactivation rate.
- 08/2022 – 09/2022 **Baykar Defense & Technology** Istanbul, Turkey
Electronic Manufacturing & Integration (Intern)
Contributed to the 3D Wiring Team within the Electronic Manufacturing and Integration Department.

TECHNICAL SKILLS

- ML & AI PyTorch, scikit-learn, XGBoost, multi-agent LLM systems, RAG pipelines (FAISS + BM25), LangChain, prompt engineering, LLM evaluation, BPE tokenisation, structured JSON outputs
- Infrastructure Docker, FastAPI, Apache Airflow, Apache Spark, AsyncIO, ETL pipelines, Git, Linux
- Data & Viz pandas, NumPy, Matplotlib, Tableau, Jupyter
- Platforms Hugging Face Spaces, Streamlit, Ollama, Groq API, Salesforce CRM

PROJECTS

Cooperating AI Agents for 5G Networks

MSc Thesis

Python, LLM Agents, AI-RAN-Sim, AsyncIO, NumPy, pandas

LLM-based multi-agent framework for distributed decision-making in 5G networks. Compared reactive, predictive, and joint UE-gNB adaptation strategies across 50+ topologies. Forthcoming publication from Fraunhofer FOKUS.

UniAdmin-AI: Compliance-Aware RAG Pilot for University Student Services

Python, LangChain, FAISS, FastAPI, Ollama

Production RAG system evaluating epistemic and ethical limits of LLM-based administrative systems. 100-question benchmark across 10 categories; **98.6% overall score** on a 4-dimension rubric (correctness, completeness, compliance, citation quality). Explicit GDPR, EU AI Act Annex III, and DPIA evaluation.

TechRAG: Production RAG Pipeline for 3GPP Standards

Python, LangChain, FAISS, BM25, FastAPI, Streamlit

Hybrid retrieval system (FAISS + BM25) achieving **0.87+ retrieval scores** on 3GPP technical standards. Streaming FastAPI backend with Streamlit UI deployed on Hugging Face Spaces.

Demo: huggingface.co/spaces/turancannb02/techrag

F1 Qualifying Lap Time Predictor

Python, XGBoost, FastF1, scikit-learn, pandas, Matplotlib

End-to-end ML pipeline predicting Formula 1 qualifying times using 3 years of telemetry and weather data. **$R^2=0.99$, MAE=0.3s**. Feature importance analysis enabling driver/weather “what-if” simulations.

LLM Strategy Analyst for F1 Telemetry

Open-Source

Python, Ollama, FastF1, CLI

Contributed hallucination-aware LLM module to an open-source F1 telemetry project. Fact-constrained prompts with structured JSON outputs for reliable decision support.

MiniGPT: GPT from Scratch

Python, PyTorch, FastAPI

Transformer trained on TinyStories (813M tokens) with custom BPE tokeniser. 10.9M parameters, val_loss 1.59 on Apple M3. FastAPI inference server.

Brain MRI Tumour Segmentation

Python, PyTorch, Computer Vision

Semantic segmentation pipeline for brain MRI using FCN with ResNet-50 backbone. Addressed class imbalance and low-contrast tumour regions. **DSC ≈ 0.75** .

AWARDS & RECOGNITION

2025 Top 10 - ITU AI for Good: Large Wireless Models Challenge (5G/6G track)
2025 OSMNT Workshop Participant, Technische Universität Berlin