Murat Tut

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EDUCATION

Çankaya University   **September 2021- June 2026**
Major: Software Engineering (English), Minor: Economics   *Ankara, Türkiye*
- GPA: 3.12/4.0
- Founder and president of Quantum Çankaya Club, board member of Data Analytic club.
- I published an article in Gazi Medical Journal in December 2025 with my NeuroMotion project.

EXPERIENCE

Giresun University   **January 2025 - February 2025**
Intern   *In-Person*
- Developed a data scraping bot in Python that collected over 10,000 articles from Turkish news websites and processed them to create the **first high-quality Turkish summarization dataset**.
- Designed an AI model based on the Pegasus architecture and enhanced it using modern optimization techniques, achieving a **50% reduction in training time** and a **5% increase in accuracy** within the same number of epochs.

Finansbank   **February 2024 - March 2024**
Intern   *Remote*
- Developed a strong understanding of financial market operations, analysis techniques, and portfolio management.
- Designed an AI model using Python and Yfinance to automatically collect and analyze financial data, track market trends, and deliver strategic insights. Enabled users with limited financial expertise to receive personalized stock and fund recommendations, potentially improving their investment decisions by **30–40%**.

PROJECTS

NeuroMotion   **June 2025 - December 2025**
- Developed a real-time, adaptive Brain-Computer Interface **(BCI)** using PyTorch-based deep learning architectures **(CNN/RNN)** to detect motion intention from EEG signals, specifically Motor Imagery (MI) and Movement-Related Cortical Potentials (MRCP).
- Engineered a low-latency communication bridge using **TCP/UDP** Sockets between the Python-based AI backend and Unity 3D simulation environment, successfully reducing end-to-end command latency to under **500ms.**
- Implemented a safety-critical control mechanism by integrating a parallel Error-Related Potential (ErrP) monitoring module that detects recognition of errors within **300ms** to trigger an immediate emergency stop. Architected a high-fidelity data processing pipeline.

Financst   **May 2025 - November 2025**
- Developed a high-performance financial tracking platform using the **MERN** stack (MongoDB, Express, React, Node.js) and Next.js, enabling users to monitor portfolios in **real-time** through live market data and dynamic interactive charts.
- Optimized the analysis of complex market data by integrating DuckDB and high-efficiency visualization tools, facilitating faster and more informed investment decision-making for users.

Synvia   **June 2025 - August 2025**
- Developed an Electron-based desktop AI application to help companies and public institutions easily integrate AI into their workflows, **increasing efficiency** while ensuring data is processed locally to prevent external leaks.
- The application allows users to utilize online or local AI models without requiring technical expertise.
- Application developed with Electron and React for cross-platform compatibility, **reducing development costs** and operational system-specific (OS-specific) dependencies

IT-ISQS   **March 2025 - June 2025**
- Served as co-project leader in a 5-person team for an EU-funded project. Managed quality assurance (QA) processes, prepared SRS and SDD documents, and created and executed comprehensive test plans and test cases.
- Enhanced user experience by developing the front-end using React and successfully presented the project and webpage to EU representatives in the final phase.

GemmaTR   **April 2025 - May 2025**
- **Addressed the lack of Turkish** LLM by training Google's Gemma model on Google Colab using the Unsloth library and LoRA technique over a 40-hour process.
- Created a dataset with **400,000** Turkish Wikipedia entries and **50,000** question-answer pairs focused on law, education, and agriculture. Developed 4 distinct models and shared them as open source on Hugging Face for community access.

SKILLS

- **Programming Languages**: Python, Java, JavaScript, C#, C
- **Web Technologies:** React, Tailwind CSS, Electron, Node.js, Express
- **Data & AI:** Scikit-learn, NumPy, PyTorch, TensorFlow, SQLite, MongoDB, MariaDB
- **Tools & Environments**: Git, VS Code, Unity, Blender, Linux
- **Languages:** English (B2), Turkish (C2), German (A2)