Fatih Erdoğan

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Education

Koç University, Istanbul/Turkey   **Sep 2020 – Jan 2025 (exp.)**
B.S. in Computer Science and Engineering (English)
Full merit scholarship
Cumulative GPA: 3.99/4.00, Area GPA: 3.99/4.00

Galatasaray High School, Istanbul/Turkey   **Sep 2015 - Jun 2020**
Galatasaray is the most prestigious high school in Turkey founded in 1481. Being a
francophone school, primary medium of instruction is French and secondary is English.
GPA: 97.39/100

Highly Gifted Students Education Program, Eskisehir/Turkey   **Sep 2012 - Sep 2015**
UYEP is a program providing high level education to secondary school students,
accepting students with an exam measuring creative thinking and mathematical skills.

Work Experience

Koç University, Istanbul/Turkey   **Jun 2024 – Present**
Undergraduate AI Researcher
- Focused on the development of vectorized High-Definition (HD) maps.
- Working on enhancing the current state-of-the-art performance, focusing on
  improving inference time and metric performance.
- Conducting in-depth research on mapping techniques, aiming to contribute novel
  approaches to autonomous driving.
- Paper: Mapping like a Skeptic: Probabilistic BEV Projection for Online HD Mapping

Baykar Technologies, Istanbul/Turkey   **Aug 2023 – Oct 2023**
Artificial Intelligence and Software Developer Intern
- Investigated the evolution of vision models on various tasks.
- Generated synthetic data.
- Integrated a SOTA model to a real-time scenario (faster inference).
- Implemented custom evaluation metrics.

Aygaz A.Ş., Istanbul/Turkey   **Jun 2022 – Sep 2022**
Digital Transformation and Software Development Intern
- Included in project management tasks related to the deployment of RPA (Robotic
  Process Automation) robot in the company.
- Extracted data from web sources, stored and managed it within an SQL database, and
  conducted fundamental analysis tasks, including data visualization and reporting.

Academic Projects

Python

- ***BEV2BEV Prediction with VQ-Transformer:*** Focused on ego-centered road layout prediction using action and frame-conditioned generative modeling (VQVAE-Transformer), leveraging CARLA simulation data to explore future scene prediction based on past BEV data and vehicle actions.

- ***Curriculum Learning Pipeline for a Large Language Model (LLM):*** Implementation of a new curriculum learning pipeline for RoBERTa, based on 3 staged gradual incrementation of the number of neurons as well as the vocabulary size.

- ***Deep Learning Model for Swing Level Prediction:*** Design and implementation of a transformer-based model combined with a new data preprocessing approach, aiming to predict the next swing level in forex market trading pairs.

- ***Bot Design for News Oriented Crypto Currency Trading:*** By integrating Telegram, Binance and Gate.io API's, I created an autonomous trading bot parsing information from news channels on Telegram and sending buy-sell orders accordingly to crypto currency exchange markets.

Java

- ***Text-based adventure game powered by LLM's:*** Creation of a dynamic and stateful text-based adventure game application, allowing to fictionize alternate movie endings.

- ***Risk Game implementation using design patterns:*** With a group of three people that I managed, we implemented a replicate of the Risk Game with agile methodology, effective Git usage, and Java AWT.

- ***Creation of an interactive restaurant menu:*** A menu allowing managers to create a menu, display stock and table information as well as customers to place orders.

C

- ***Linux kernel module and a custom shell implementation,*** allowing to use most of the functionalities provided by the bash. Custom implementation of some commands such as alias, hexdump, etc. Implementation of a new Linux kernel module, a character device, building a process tree rooted at a given process id.

Network and Security

- ***Article on Password Based Authentication Systems:*** I made research on the existing password-based authentication paradigms, investigated their strengths and downfalls. You can find the article [here](#).

- ***Server/Client Application using java.net with Design of an Application Layer Protocol:*** The server side accepts connection requests and creates a server thread which responds user's requests appropriately. The communication happens over the TCP with a custom application layer protocol.

- ***Simulation with Cisco Packet Tracer:*** I created a network simulation for a small company that can support up to 31 branches with a maximum of 126 devices each. The

project included appropriate subnetting with gateway, and routing configurations for the end-devices and routers respectively

Technical Skills and Proficiencies

- Python (PyTorch, NumPy, Pandas, Matplotlib, Django REST)
- Java (Spring Boot, AWT, Junit)
- Deep Learning (Finance, NLP, Computer Vision, Autonomous Driving)
- Network Design and Security
- DevOps Tools (Docker, DockerCompose)
- DBMS (PostgreSQL, MySQL)
- Linux Command Line Interface
- Wireshark and Cisco Packet Tracer
- C / Assembly Language

Languages

- Turkish (native)
- English (IELTS – C1)
- French (DELF – B2)

Publications

- F. Erdogan, M. R. Barin, and F. Guney. "Mapping like a Skeptic: Probabilistic BEV Projection for Online HD Mapping." Proceedings of the British Machine Vision Conference (BMVC), 2025. link

Honors, Achievements and Certificates

- Vehbi Koç Honor Certificate (Awarded for outstanding academic performance) (Koç University/Istanbul, 2024)
- IELTS score: 8.0 (2024)
- 144th in Turkish University Exam (YKS Mathematics and Science, 2020)
- DELF (Diplôme d'Etudes en Langue Française) B2 certificate (2018)
- 1st in Beyoglu County Table Tennis Competition (Beyoglu/Istanbul, 2017)
- CERAN Language School (French) - B1 certificate (Ferrières/Belgium, 2016)
- 3rd in Yeditepe University Debate Competition (Istanbul, 2016)
- 1st in the National High School Placement Exam in Turkey (TEOG 2015)

Extra-Curricular Activities

Instructor (Turkish): Participation as instructor to several camps aiming to prepare high school students to Turkish university exam (2020-2023).

Private Lessons (French): Co-Founder of Cicero Academy, giving private lessons from science related subjects (Math, Physics, Chemistry, Biology) and providing mentorship to francophone high-school students. (2019-2021)

Table Tennis: Chairman of Galatasaray High-School Table Tennis Club, licensed player for 8 years (2013-2021)

Model United Nations (French): Co-Chairman of Galatasaray High-School MFNU Club, experience as delegate, chair of committee and chair of general assembly. (2016-2020)

Debate (Turkish): Co-Chairman of Galatasaray High School Debate Club, participant of numerous debate competitions. (2015-2017)