

## Fatih Erdogan

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### Education

**University of Oxford, Oxford/United Kingdom**

**Oct 2025 – Oct 2026 (exp.)**

MSc. in Advanced Computer Science, GPA: N/A

**Koc University, Istanbul/Turkey**

**Sep 2020 – Jan 2025**

B.S. in Computer Science and Engineering (English)

Cumulative GPA: 3.99/4.00, Major GPA: 3.99/4.00; Graduated 2<sup>nd</sup> in Department

**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. GPA: 97.39/100

**Gifted Students Education Program, Eskisehir/Turkey**

**Sep 2012 - Sep 2015**

UYEP is a program providing advanced education, admitting students based on an exam measuring creative thinking and mathematical skills.

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### Work Experience

**Koc University, Istanbul/Turkey (Undergrad. AI Researcher)**

**Jun 2024 – Sep 2025**

- Designed CNN-based model with probabilistic feature extraction and confidence driven temporal aggregation for vectorized HD mapping in autonomous driving.
- Achieved up to 20% improvement over previous SOTA methods (see [paper](#)).

**Baykar Technologies, Istanbul/Turkey (AI Intern)**

**Aug 2023 – Oct 2023**

- Built simulation generating synthetic data to evaluate models on detection task
- Adapted semantic segmentation models and finetuned them on additional data

**Aygaz A.S., Istanbul/Turkey (Data Analytics Intern)**

**Jun 2022 – Sep 2022**

- Assisted in the deployment process of an RPA robot within the company.
  - Retrieved data from various web sources into an SQL database and performed data analysis including cleaning, visualizing, and reporting.
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### AI Projects

**BEV2BEV prediction with VQ-Transformer:** Developed a VQVAE-Transformer model where past bird's eye view (BEV) frames are encoded into a latent space, a Transformer performs action and frame conditioned prediction, and the decoder reconstructs future ego-centered road layouts (used CARLA simulation data).

**Curriculum learning pipeline for LLM's:** Built a three-stage curriculum learning pipeline for RoBERTa on the HuggingFace framework, gradually increasing network capacity (neurons) and vocabulary size.

**Deep learning model for swing level prediction:** Designed and implemented a transformer-based model in PyTorch with a novel data preprocessing approach to predict the next swing level in forex market trading pairs.

**Text-based adventure game powered by LLM's:** Implemented a stateful text-based adventure game with prompt engineering in Spring Boot, enabling the generation of alternate movie endings.

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### Other Projects

**Cryptocurrency Data Terminal:** Developed a terminal supporting around 1500 market pairs, with multithreaded WebSocket handling for real-time updates, historical candle aggregation into higher timeframes, and custom metric extraction. Implemented InfluxDB storage, proxy servers to overcome rate limits, and in-memory caching for low-latency data access.

**Linux kernel module and a custom shell implementation:** Enabled core bash functionalities with a custom shell including commands such as alias and hexdump. Developed a Linux kernel module as a character device to construct process trees rooted at a given process ID.

**Risk Game Implementation Using design patterns:** Backend implementation of the "Risk Game" in Java with agile methodology and effective Git usage.

**Network Simulation:** Designed a network simulation on Cisco Packet Tracer with proper subnetting, gateways, routing configurations for end devices and routers.

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## 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](#)

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## Languages and Technical Skills

- Turkish: native • English: C1 – IELTS: 8.0 (2024) • French: B2 – DELF (2018)
- Python (PyTorch, NumPy, Pandas, Matplotlib, Django REST) • Java (Spring Boot, Junit) • C
- Assembly Language • Deep Learning (Finance, NLP, Computer Vision, Autonomous Driving)
- Network Design • DevOps (Docker) • DBMS (PostgreSQL, MySQL, InfluxDB) • Linux Command Line Interface • Cisco Packet Tracer

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## Honors, Achievements and Certificates

- Vehbi Koç Honor Certificate (for outstanding academic performance, Koc University, 2024)
- Physics course honor list (Koc University, 2021)
- 144<sup>th</sup> in Turkish University Exam Maths and Science branch (2 million+ participants, 2020)
- 1<sup>st</sup> in Beyoglu County Table Tennis Competition (Istanbul, 2017)
- 3<sup>rd</sup> in Yeditepe University Debate Competition (Istanbul, 2016)
- 1<sup>st</sup> in the National High School Placement Exam in Turkey (1 million+ participants, 2015)

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## Extra-Curricular Activities

**Instructor:** 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 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)