MERT UNSAL

mailmertunsal@gmail.com ⋄ +41762674311

EDUCATION

ETH Zurich - MSc Data Science GPA: 5.76/6.00   2023 - 2025
- Awarded the full ride **Excellence Scholarship** of 24000 CHF annually given to one student in the program.
- Advanced coursework in machine learning, algorithms, statistics. Research project with Prof. Afonso Bandeira on understanding gaps between statistical and computational thresholds through the Low Degree Conjecture.

École Polytechnique - BSc Mathematics GPA: 4.16/4.0   2020 - 2023
- Graduated **Summa Cum Laude** as **2nd** with a double major in Mathematics and Economics and a minor in Computational Math. Awarded Excellence Scholarship of 4000 Euros for 3 years.
- Exchange Semester at **ETH Zurich** where I took graduate courses in computer science such as Advanced Machine Learning, Probabilistic AI, Randomized Algorithms.

Bahcesehir High School for Science and Technology - Physics Olympiads Track   2015 - 2020
- Awarded a full-ride merit-based scholarship of approximately 15,000 USD for 5 years.
- Won medals at international physics olympiads as a part of the national team. Most notable awards include **Absolute Winner & Gold Medalist** at Princeton University Physics Competition 2018, **Bronze Medalist** at International Physics Olympiads 2019, and **Silver Medalist** at European Physics Olympiads 2020.

EXPERIENCE

Research Assistant at SRI Lab at ETH Zurich   Mar 2024 - Now
- Working with Prof. Martin Vechev on developing an transformer-based architecture that learns exact step-by-step integration of complex mathematical expressions through interacting with a symbolic deduction engine. Paper to be submitted to ICLR.
- Reviewed papers for the ICML 2024 WANT Workshop.

Research Intern at Huawei Technologies   Jan 2023 - Mar 2023
- Completed my Bachelor Thesis on neural network training algorithms that results in models of flexible size, latency, and energy consumption in both centralized and federated setups in order to deploy modern ML architectures. Paper presented in NeurIPS 2023 Workshop on Advancing Neural Network Training.

Quantitative Trading Intern at Susquehanna International Group   Jun 2023 - Sep 2023
- Extensive education in market making, option theory, financial engineering, trading, and poker.
- Project on stochastic modelling of volatility surfaces of index options.

Research Intern at SciencesPo   Jan 2022 - Sept 2022
- Working with Prof. Alfred Galichon to develop a ride-hailing simulation to benchmark multi-agent reinforcement learning and dynamic matching algorithms. Published an OpenAI gym environment UberGym.

Data Scientist at Olympos   Mar 2022 - Oct 2022
- Developed ML models using modern techniques such as human-in-the-loop AI in order to provide data analytics to startups and VC firms to help with their recruiting process. Gained particular experience with classification models, NLP, large-language-models, transformers, PyTorch, and MongoDB.

PROJECTS

CSE201 Project Leader: LogistiX   Oct - Jan 2021
- Project leader and head of the algorithms team in the project LogistiX: a desktop application/software aiming to provide an open source implementation of approximation algorithms with heuristics for Travelling Salesman Problem for logistics companies. Managed a team of 12 students developing the application.

Programming Languages: Python (>20,000 lines), C++ (>5,000 lines), Rust.