Nurtilek Duishobaev

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Education

Korea Advanced Institute of Science and Technology **Sep. 2023 – June 2027**

Bachelor of Science in Computer Science and Mathematics *Daejeon, Republic of Korea*

- **Computer science coursework:** Algorithms, Data Structures, Deep Learning, System Programming, Theory of Computation.
  [Python, Java, C++, C, SQL, Linux.]
- **Math coursework:** Statistical Learning Theory, Statistics, Linear Algebra, Probability, Analysis, Discrete Math.
  [TensorFlow, PyTorch, Pandas, NumPy, scikit-learn, matplotlib.]

Work Experience

Machine learning research intern **December 2025 – Present**

MBank *Bishkek, Kyrgyzstan*

- Developing a Kyrgyz-language voice-assistant for a mobile banking app by fine-tuning Gemma-family LLMs. For dataset I **built** a flexible synthetic dataset generation pipeline with multi-prompting system for variability. After fine-tuning, classification accuracy **on synthetic test dataset is 100%, but** more tests need to be done on real human utterances.

Undergraduate physical modeling research intern **October 2025 – Present**

Meta Earth Lab, Graduate School of Metaverse, KAIST *Daejeon, South Korea*

- Working on statistical climate downscaling (improving the image quality of climate data) using Image-2-Image deep learning models. Alongside experimenting with hard-constraining (preserving validity of physical laws). **Built** a Soft-Max hard-constraining based SRCNN **reducing MAE error of naive SRCNN by 2.3%** on average.

Undergraduate transportation engineering research intern **July 2025 – August 2025**

TUPA Lab, Graduate School of Mobility, KAIST *Daejeon, South Korea*

- Worked on solving Traveling Salesman Problem in a human-centered way by building Ant Colony Optimization with real human data used to initialize the "pheromone" parameter. The goal was to build a routing algorithm that **captures latent preferences** of people (less elevation, less turns, less traffic light waiting time, etc.) that GPSs often overlook.
- Because forcing the ant to follow a Hamiltonian Path (prohibiting to use the same edge twice) fails if Graph is not complete or even very sparse, I **developed** a new version of the algorithm that relaxes the condition but punishes ants by scaling down the pheromone amount the ant has released by # of violations.

Financial Data Analyst Intern **June 2024 - August 2024**

Enabling Qapital AG *Zürich, Switzerland (remote)*

- Worked on optimizing the investment scheduling algorithms. Initially, algorithms were hard coded into huge Excel dataset with 80,000 lines that took minutes to open and hours to re-run all updates. I **built** an Excel-independent dynamic python algorithm that performs error-checking on all entries, adjusts to new values of exchange rates, and outputs all updated transaction schedules in less than 15 minutes, **reducing total runtime by more than 10 times.**

Awards and Honors

International Mathematical Olympiad (IMO). Two Honorable Mentions. **June 2022, June 2023**

As a member of the Kyrgyzstan IMO team *Oslo, Norway; Chiba, Japan*

- Scored 15 and 13 out of 42 possible points in 2022 and 2023, respectively, performing better than 35% of the best math students in the world in each year.

Winner. Kyrgyzstan National Olympiad Series in Mathematics (Advanced). **March 2022**

As a representative of Chyngyz Aitmatov High School *Bishkek, Kyrgyzstan*

- Ranked 1st in the third and final stage (Republican Olympiad) in the subject of mathematics.
- Ranked 2nd in the second stage (City Olympiad, Bishkek) in the subject of mathematics.
- Ranked 2nd in the first stage (District Olympiad, Sverdlov District) in the subject of mathematics.