Daniil Dubinin

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Education

- **Higher School of Economics** — Moscow, Russia
  Bachelor's degree in Applied Mathematics and Informatics — *Sep. 2022 - Jun. 2026*
- **Relevant CS Courses**: C++, Rust, Algorithms and Data Structures,
- **Relevant Math Courses**: Matrix Computations, Time Series, Machine Learning, Deep Learning, Optimization for Machine Learning, Applied Machine Learning,

Projects

- **Neural Machine Translation System** — University Project

  Python | PyTorch | NLP

  Developed an LSTM-based sequence-to-sequence model with attention mechanism for German-English translation, achieving 26 BLEU4 score on private leaderboard.

  - Implemented and optimized beam search algorithm for BLEU4 maximization
  - Conducted extensive hyperparameter tuning
  - Implemented custom Vocab class for efficient tokenization with numbers and cross-lingual tokens
  - Integrated dynamic teacher forcing and adaptive learning rate
  - Tracked training process using Weights & Biases
  - Developed custom evaluation metrics and debugging tools for translation quality analysis

- **Fibers** — University project

  C++ | Assembly x86 | gdb

  Implemented a Fiber (lightweight thread of execution) multiplexer class using C++. Program allows you to create fibers and manage them using cooperative multitasking principles.

  - Developed low level function for switching to a different stack and callstack using inline assembly
  - Tracked data movements using gdb
  - Designed algorithm to manage multiple fibers using OOP principles

- **Image processor** — University project

  C++ | CMake | Bash | OOP

  Implemented a console application using C++. It allows you to apply various filters to images, similar to filters in popular graphic editors. Worked directly with BMP file format without using third-party image processing libraries.

  - Used various OOP patterns, designed complex but strict inheritance structure
  - Covered whole functionality with unit tests using GoogleTest
  - Passed multiple code reviews
  - Implemented several complex filters like Gaussian Blur
  - Reflected all stages of the project on GitLab
  - Implemented exception handling

Skills

- **Programming Languages**: C++, C, Assembly x86, Python
- **Technologies**: Linux, git, gdb
- **Knowledge**: Algorithms, Data Structures, OOP
- **Libraries**: PyTorch, pandas, numpy, Flask
- **Languages**: English (Upper-Intermediate), Russian (Native)

Hobbies

Chess, **Poker**, **Football**