Nikolay **Chechulin**

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Education

London School of Economics *Remote*
BS in Data Science and Business Analytics *Sep 2021 – Jul 2024*

Higher School of Economics *Moscow, Russia*
BS in Data Science *Sep 2020 – Jul 2024*

Experience

Alor Invest *Moscow*
HFT Quantitative Trader *Jan 2023 – Present*
- Come up with new HFT MM and Arbitrage strategies and implement them in C++
- Create data analysis tools
- Monitor trading activities, track and assess strategy performance

HSE Laboratory of AI in Mathematical Finance *Moscow*
Intern Researcher *Sep 2023 - Jun 2024*
- Research pairs trading strategies on MOEX

HSE Robotics Group *Moscow*
ML Intern *Jul 2022 – Jun 2023*
- Research and implement Reinforcement Learning algorithms
- Implement a Python simulator for CartPole problem
- Integration with the existing technology stack

Higher School of Economics *Moscow, Russia*
Teaching Assistant *Sep 2021 – Jun 2023*
- Hold office hours and consultations, Check and grade homeworks
- Worked as a TA on the following courses: Introduction to Programming (Python, C++), Algorithms and Data Structures, Computer Architecture and Operating Systems

Skills

Spoken Languages: Russian (native), English (C1 IELTS Academic)
Python: PyTorch, SKLearn, Pandas, Numpy, Seaborn, Matplotlib, multiprocessing, parsing
C++: STL, QT, Algorithms and Data Structures
ML & DL: Classical ML models, ANNs, basics of Reinforcement Learning, basics of Computer Vision
Statistics & Finance: Black-Scholes, Time Series and Stochastic Processes, ARCH, GARCH, Econometrics
Rust: STL, Tokio, egui

Projects

Search for Arbitrage Opportunities *C++, Python*
In this project, I researched the applicability of classical HFT pairs strategies on Moscow Stock Exchange. The project used an industry-grade backtester with Limit Order Book data, real-world latencies and commissions. Also, I suggested an improvement to the base algorithm, resulting in greater profitability and smoother equity plot.

CartPole RL *Python, PyTorch*
I coded a custom physics engine and trained an RL agent to swing up the pole. This involved implementation of several RL algorithms from scratch, but we stopped on DDPG, since it showed the best performance with regard to training time.

Topological Deep Learning *Python, Pytorch-Geometric*
A custom graph preprocessing algorithm for Graph Neural Networks, allowing us to merge some nodes in the graph, resulting in 22% decrease in nodes number and 57% decrease in edges number, while dropping accuracy by only 7%.