Fedor Kuyanov

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Education

Higher School of Economics **September 2020 – July 2024**
Bachelor in Computer Science, GPA 9.72/10 *Moscow, Russia*

Summer schools

- Contemporary Mathematics (2019)
- Summer Conference of the International Mathematical Tournament of Towns (2018)

Work experience

HSE, Laboratory of Theoretical Computer Science **September 2022 – December 2022**
Research assistant *Moscow, Russia*

- Research in Mathematical Physics and Number Theory: Feynman checkers.

Moscow State School №57 **September 2022 – December 2022**
Teaching assistant *Moscow, Russia*

- Assisted math analysis and programming lessons in Moscow State School №57, one of the top math schools in Russia.

Huawei **June 2022 – December 2022**
Software Engineer *Moscow, Russia*

- Member of the graph computing team focused on fluid and gas processes simulation using discrete lattices.
- Implemented distributed versions of algorithms in Linear Algebra, such as the Conjugate gradient method and Lanczos algorithm.

Yandex **May 2021 – August 2021**
Software Engineer Intern *Moscow, Russia*

- Worked in the team responsible for the quality of Yandex voice assistant Alice.
- Enhanced scenario classification by adding new factors and adapting the learning process for different devices.

Summer informatics workshop **June 2020**
Coach *Moscow, Russia*

- Prepared practice contests and tutorials for Russian national team candidates.

Publications

- Feynman checkers: number-theoretic properties (preprint, arXiv:2210.07306)

Conferences

- 29th International Scientific Conference "Lomonosov" (2022), Number-Theoretic Properties of the Wave Function in Feynman Checkers Model
- Satellite mini-workshop (Haifa, 2023), Feynman checkers: number-theoretic properties

Projects

Wordle | *C++, JavaScript* **August 2022**

- The goal of this game is to guess a 5-letter word in 6 tries based on the information about each letter.
- Two modes: "random" and "hater", meaning that the answer is selected randomly or adaptively.
- Also implemented a heuristic strategy that uses 3.52 tries on average, which is close to the record 3.42.

Fejudge | *Python, Linux kernel* **September 2021**

- This is a management system for programming contests with a web interface.
- It uses several Linux kernel features (such as cgroups) and supports simultaneous evaluation on different machines.

TheTrueHat | *JavaScript, Vue* **August 2021**

- This project allows playing the Hat (Alias) game from the browser.

Kotline | *Kotlin, React* **January 2021**

- This is a geometric puzzle where one must build the longest non-self-intersecting polygonal chain from start to end.
- Also contains a mode where one can find the best solution automatically.

Skills & interests

- **Programming languages:** C/C++, Python, Kotlin, HTML/CSS, JavaScript, Bash, SQL
- **Libraries & frameworks:** QT, NumPy, matplotlib, pandas, PyTorch, Flask, React, Vue
- **Tools:** CI/CD, git, docker, gdb, cmake
- **Interested in:** Complexity Theory, Discrete Math, Combinatorics, Mathematical Logic

Awards

- Ilya Segalovich Scholarship, the top award of Computer Science Faculty, HSE (2022)
- Tinkoff Scholarship (2022)

Olympiad achievements

- Gold medal at IMC 2021 and IMC 2022
- Silver medal at Semifinal ICPC 2020, NERC
- Winner of several inter-university math competitions: NCUMC, OMOUS, MIPT, OSAM Comp'21
- Prize-winner of the All-Russian Olympiad in Mathematics (2018, 2019, 2020)
- Winner of the All-Russian Olympiad in Informatics (2018), prize-winner in 2017, 2019, 2020
- 6 times winner of the International Mathematical Tournament of Towns (2014 - 2019)

Languages

- English: C1 (IELTS 7.0)
- Russian: Native speaker

Hobbies

- Railway modeling, Lego
- Chess, speed-cubing (3x3, 36 secs), ping-pong
- Classical piano – finished 8-year Gnesin music school and performed with the orchestra, YouTube, winner of Moscow and international piano competitions