ELIZABETH SAFONOVA

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EDUCATION

BS in Applied Mathematics and Information Technology, HSE University *Sept. 2020 - June 2024*
GPA: 4.0/4.0
Merit-based scholarship covering full tuition

Relevant Coursework: Algorithms and Data Structures, Introduction to Programming, Computer Architecture and Operating Systems, Linear Algebra and Geometry, Calculus, Discrete Mathematics, Abstract Algebra

TECHNICAL SKILLS

Languages Python3, C++ **Libraries** NumPy, SciPy, Matplotlib, pandas, Keras
Tools Jupyter Notebook, Google Colab, PyCharm, Wing IDE, CLion, Git, LaTeX, HTML/CSS, JavaScript

EXPERIENCE

Research Intern *July 2021 - Dec. 2021*
HSE University Laboratory of Complex Systems Modeling and Control
Python, NumPy, SciPy, Matplotlib, PyWavelets, Keras, Jupyter Notebook | GitHub

- Implemented an algorithm for generating synthetic data that simulates signals registered during solar flares based on models from papers.
- Achieved 89% accuracy on modeled signals in the task of solar flare classification using a convolutional neural network.
- Automated pattern recognition for signal characteristics in wavelet spectrum using NumPy, pandas and Shapely libraries.

PROJECTS

LANIR - a wearable that helps athletes improve performance by analysing their physiological and emotional state | Pitch Deck
Python, NumPy, SciPy, Matplotlib, PyWavelets, HeartPy

- Helped determine an optimal sensor placement based on existing research, found freelancers who created designs of a PCB and a wearable itself.
- Implemented an algorithm for extracting data from a signal provided by a NIRS sensor, got values of vasomotion, heart, breathing, metabolism rates, oxygen levels in blood and tissue.
- Automated classification of signals into states based on clinical recommendations.

C++ features implementation | GitHub
C++

- Working directly with dynamic memory, wrote class templates that are simplified implementations of C++ std::unique_ptr, std::optional, std::list and std::vector.

ACHIEVEMENTS

- High school honors diploma, GPA 4.0/4.0. *2020*
- **National "Moscow Mathematics Olympiad for High School Students"** *2020*
  3rd prize, top 8.5% out of 600 participants
- **National "Physics Olympiad hosted by MIPT University"** *2020*
  3rd prize, top 6% out of 10000 participants
- **All-Russian Olympiad in Economics** *2019*
  Prize-winner of the finals, 80th place out of more than 30000 participants nationwide