

Olga Kuzmich

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EDUCATION

Johns Hopkins University, Baltimore, MD

B.S. in Applied Mathematics and Statistics

Expected May 2027

Cumulative GPA: 3.97/4.00

Coursework: Graduate-level Probability, Optimization, Computational Mathematics, Calculus III, Linear Algebra

Independent coursework: Computer Vision by Deep Learning School; Machine Learning with Python: Zero to GBMs, Deep Learning with PyTorch: Zero to GANs by Jovian

Awards:

- RISE Global Winner 2022 - recognized by Forbes, one of the 100 Global Winners selected from 80,000 applicants worldwide; received a full-ride scholarship at any university in the world
- Belarusian National Biology Olympiad, diploma of the 1st degree, 1st place. Member of the Belarusian team for the International Biology Olympiad (IBO) 2022
- International Tournament of Young Mathematicians 2020, 2021, Bronze medals
- International Conference of Young Scientists 2021, Research on Graph Theory, Bronze medal
- National Competition of Research Works of High-School Students, Mathematics, 2nd place, diploma of the 1st degree
- National Tournament of Young Mathematicians 2020, Special Prize for the Best Solution at the Tournament

EXPERIENCE

Directed Reading Program in Applied Mathematics, Student, Baltimore, MD

09/24 – Present

- Dedicate 4 h/week for advanced mathematics topics such as SVD, Fourier Analysis, and Compressed Sensing under the supervision of a PhD student
- Visualize mathematical concepts in Python to clearly communicate complexity in the final presentation

Center for Data Science in Emergency Medicine, Data Scientist, Baltimore, MD

02/24 – Present

- Secured a position during my freshman year, joining the top 5% of JHU undergraduates involved in paid research
- Developed and trained advanced ML models (CatBoost, CNN, LSTM, CRNN) to predict ESBL in ED patients, reducing antibiotic prescription error by 12%
- Achieved a ROC AUC score of 0.85, surpassing all published approaches for ESBL prediction

Kelp Forest Segmentation Competition, Team Captain, remote

11/23 – 02/24

- Conducted thorough testing of various deep learning models, including Feature Pyramid Networks (FPN), MANet, and Unet, to determine the most effective approach for image analysis, achieving a dice score of 0.73.

Protenus AI Hackathon, Carey Business School, Team Captain, Baltimore, MD

11/23

- Applied XGBoost and SARIMAX models to tackle sales forecasting challenges for the Protenus.

Algimed Tech., Data Scientist, Minsk, Belarus

05/23 – 07/23

- Developed a random forest algorithm for detecting cancer stages using miRNA content data, achieving 0.8 ROC AUC score
- Translated intricate programming terminology into accessible language through team presentations

CONFERENCES & PUBLICATIONS

- “Predictive models to improve antibiotic decision-making in the Emergency Department for Extended-Spectrum β -Lactamase-producing Enterobacterales infections”, *IDWeek*, Los Angeles, CA, October 19, 2024
Authors: **Olga Kuzmich**, Xihan Zhao, Jerald Cherian, Sara E Cosgrove, Jeremiah Hinson, Eili Y. Klein
Abstract Accepted for Poster Presentation

SKILLS

- *Programming languages:* Python (pandas, numpy, matplotlib, scikit-learn, PyTorch), R (tidyverse, ggplot2), C/C++;
- *Other skills:* Git/Github, LaTeX;