Phillip Guo

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EDUCATION

University of Maryland College Park Expected Graduation: May 2025
B.S. in Computer Science and Mathematics, 4.0 GPA *College Park, MD*
- Full Banneker Key Scholar (full-ride scholarship to UMD, <0.5% admitted students)
- Advanced Cybersecurity Experience for Students Honors Living-Learning Program (80 students annually)

EXPERIENCE

First-Year Trading and Technology Program March – April 2023
Jane Street *New York, NY*
- One of 90 students selected for Jane Street's annual First-Year Trading and Technology Program
- Attended week-long program on market making, derivatives, and math and trading competitions

Junior Quantitative Analyst September 2022 – Present
Smith Investment Fund, UMD *College Park, MD*
- One of 30 members on a student-run quantitative team with a 10% acceptance rate
- Contributed to infrastructure for live-trading and high frequency trading of equities
- Led development of infrastructure to optimize portfolios based on given factor models such as Fama-French

Researcher, Lead Author on Published Paper May 2021 – April 2022
University of Maryland *College Park, MD*
- Wrote paper "Bandit-Based Multi-Start Strategies for Global Continuous Optimization"
- Proposed 8 novel methods for global optimization, implemented original and established algorithms in Python
- Paper accepted by Winter Simulation Conference 2022, published in proceedings and gave live presentation
- Became Regeneron Science Talent Search Scholar for project

Researcher, Co-author on Published Paper August 2021 – December 2021
Carnegie Mellon University *Remote*
- Co-wrote literature review paper "Fake News Detection: Misleading Headlines and Satire"
- Focused on ML architectures/techniques including LSTMs, XGBoost, word encodings, and attention
- Published in International Journal of Computing and Biological Intelligent Systems 2022

PROJECTS

Prune and Tune | *Python, PyTorch, Jupyter Notebook* February 2023
- First author on paper "Prune and Tune: Improving Efficient Pruning Techniques for Massive Language Models"
- Developed novel method for pruning LLMs like GPT-3, demonstrated significant performance improvements
- Pruned models to 50-80% sparsity, making them easier to store and faster to compute
- Submitted paper to International Conference on Learning Representations Tiny Papers Track

Deep Thinking | *Python, PyTorch* December 2022 - February 2023
- Replicated/continued research on Deep Thinking, ML recurrent architectures that can scale up problem difficulty
- Made CNN to find optimal maze paths, trained only on 9x9 mazes, able to solve 13x13 mazes and larger
- Examined why Deep Thinking works using NN loss landscape visualization

AWARDS

Putnam Competition, top 200 December 2022
- Placed in the top 148 out of 3000 competitors, placed 4th on the UMD team who won 4th place nationally

Regeneron Science Talent Search Scholar January 2022
- One of 300 scholars nationally, received a $2000 scholarship for novel research

TECHNICAL SKILLS

Languages: Java, Python, C, LaTeX, MATLAB
Developer Tools: Unix, Jupyter Notebook, Git, GitHub, Google Colaboratory, PyCharm, Eclipse
Libraries: NumPy, PyTorch, Tensorflow, Keras, SciPy, Pandas, Scikit-Learn