Oliver Broadrick

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Education

B.S., The George Washington University, 2018-Present.

Major in Computer Science

Major in Mathematics

GPA: 3.77

Research Experience

Statistical Election Audits (2020-Present)

Worked with Professor Poorvi Vora and Professor Filip Zagòrski on post-election Risk-Limiting Audits (RLAs). An RLA uses a random sample of paper ballots to guarantee with known probability that election outcomes incorrectly announced by ballot tallying machines will be detected and corrected. I have developed novel mathematical methods for ballot-polling RLAs and stratified RLAs, and I have written a significant portion of the open-source audit software library r2b2.

Hotel Image Recognition (2021-Present)

With Professor Pless and three peers, I am working on a search utility that uses key points to improve on existing hotel recognition methods, especially for query images with high occlusion. An existing search utility is used by the National Center for Missing an Exploited Children for sex trafficking investigations.

Imprecise Scheduling (2021-Present)

Working with Professor Bhagi Narahari to develop novel scheduling algorithm for neural network tasks using an imprecise computation model. Progress is partially reflected in software repository.

Teaching Experience

Undergraduate Teaching Assistant (2021-Present)

Taught weekly discussion section, assisted in lectures, hosted office hours, with consistent, positive feedback from students and high attendance to office hours.

Foundations of Computing, Spring 2022

Discrete Structures II, Fall 2021

Learning Assistant (2020-2021)

Assisted in lectures and discussions, recorded supplemental lectures, hosted office hours.

Foundations of Computing, Spring 2021

Discrete Structures II, Fall 2020

Discrete Structures I, Spring 2020

Tutor (2016-Present)

Tutored dozens of high school and college students for hundreds of hours, one-on-one and in groups, mainly in mathematics, physics, and computer science.

Tungsten Prep (2018-Present)

GW Athletics Department (2018-2020)

High school peer tutoring program at Berwick Academy (2016-2018)

Honors and Awards

2022, Member, Pi Mu Epsilon Mathematics Honorary Society

2021, Summer Undergraduate Program in Engineering Research (SUPER)

2021, Intercollegiate Rowing Coaches Association Scholar-Athlete Award

2021, Intercollegiate Rowing Association Men's Heavyweight All-Academic Team

2020, Summer Undergraduate Program in Engineering Research (SUPER)

Peer Reviewed Publications

1. Oliver Broadrick, Sarah Morin, Grant McClearn, Neal McBurnett, Poorvi L. Vora and Filip Zagòrski, "Simulations of Ballot Polling Risk-Limiting Audits". Seventh Workshop on Advances in Secure Electronic Voting, in association with Financial Cryptography 2022.