FRANKLIN S. HARDING

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Education:

Oregon State University, September 2020 - June 2024 (expected)
Honors Bachelor of Science in Mathematics, Minor in Computer Science
GPA: 3.97. Finley Academic Excellence Scholarship, Honor Roll

Publications:

- Willow Barkan-Vered, F.H., Jonathan Keller, and Jiayu Xu. On the Non-Malleability of ECVRF in the Algebraic Group Model, 2023. https://eprint.iacr.org/2023/1004

Experience:

- Cryptography REU Participant (University of South Florida, May 2023 - August 2023)

  Contributed to a research project on developing post-quantum Verifiable Random Functions led by Jean-François Biasse. NSF-funded Research Experience for Undergraduates (REU) program.

- Math Learning Assistant and Honors Math Tutor (OSU, March 2022 - May 2023)

  Assisted students with in-class activities for Vector Calc I, Infinite Series, and Matrix Algebra as a Learning Assistant. Held weekly math tutoring sessions for honors students.

- Engineer (Securing Hardware, May 2020 - September 2021)

  Designed and programmed mock targets for physical hardware attack classes. Developed Tigard: an open-source FT2232H-based hardware hacking tool that is widely used by the community.

- Software Engineer, Engineering Intern (Billups, July 2018 - October 2019)

  Developed and maintained Go and Python backend services, contributed features to a large Typescript/React frontend, and developed Python scripts for scraping various APIs and websites.

Projects:

- Discrete Logarithms in $\mathbb{Z}_p^*$

  Wrote a final class paper for Computational Number Theory on the Baby-step Giant-step, Pollard Rho, and Pohlig-Hellman algorithms. Further studied Pollard's Rho algorithm for a CS projects credit supervised by Jiayu Xu.

- BSidesPDX 2019 Capture the Flag Web Challenges

  I created all three web challenges for the BSidesPDX 2019 Capture the Flag hacking competition. They involved JWT authorization exploits, server-side request forgery, and MongoDB injection.

- Gloworm and Peregrine

  As part of my high school robotics team, I designed, had manufactured, and sold Gloworm: a Raspberry Pi Compute Module based smart camera for vision tracking in FIRST Robotics competitions. I also helped develop a web application named Peregrine for scouting teams in competitions.

Activities:

- OSU Rock Climbing Club (September 2021 - current)

  Competed in the Northwest Collegiate Climbing Circuit and led practice for the 2022 season.