

Jacob Blindenbach

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EDUCATION

University of Virginia, School of Engineering,

Charlottesville, VA, August 2018 - May 2022

B.S. in Computer Science and Mathematics

- Cumulative GPA: 3.971, Major GPA: 4.0
- *Rodman Scholar*: honors distinction awarded to the top 5% of engineering students
- *Teagle Scholarship, Lee R. Raymond award (2018)*, awarded based off academic merit and character

PUBLICATIONS

Avoiding genetic racial profiling in criminal DNA profile databases

Jacob A. Blindenbach*, Karthik A. Jagadeesh*, Gill Bejerano and David J. Wu (*contributed equally)

Nature Computational Science, 1 (4), 2021 <https://doi.org/10.1038/s43588-021-00058-3>

- Presented at GenoPri 2021 and SRC TechCon 2020
- Had press coverage by [Stanford Medicine](#)
- Designed and implemented a novel oblivious evaluation of layered finite state machines algorithm which is used to hide innocent queried DNA profiles from criminal DNA databases to prevent misuse of genetic data which often leads to racial profiling. This algorithm can privately query a database with one million DNA profiles in under 40 seconds
- Sponsored by the Joint Undergraduate Microelectronics Program and the Undergraduate Research Initiative

RELEVANT EXPERIENCE

CryptGPU Researcher

Charlottesville, VA, May 2021 - Present

- Working with David Wu and Yuan Tian on the privacy-preserving machine learning framework, CryptGPU
- Researching cryptographic primitives designed for the GPU
- Working on increasing the performance of linear operations on secret shared data using the Chinese Remainder Theorem decomposition
- Developing a new parallel prefix comparison circuit for most significant bit extraction that optimizes communication and round complexity

Teaching Assistant for CS 4102 (Algorithms) and CS4501 (Cryptography)

Charlottesville, VA, January 2020 - Present

- Selected as one of four head teaching assistants
- Developed cryptography problem sets and conducted weekly office hours to support students

Undergraduate Research Network, Technology & Advising Lead Officer

Charlottesville, VA, January 2019 - Present

- Encouraged undergraduate students who are interested in research to get involved and gain their experience by publicizing and updating research-related news online
- Maintained the website for the Oculus, a student run academic research journal
- Connected with UVA Professors to advertise their research projects
- Established a new “office hours” style advising system to excite more students about getting involved with research

Software Engineer Intern, Microsoft

Redmond, WA, May 2021 - August 2021

- Worked on a cybersecurity team to improve device security for over 700 million devices
- Performed full-stack development with C#, React Redux, Typescript
- Designed the user interface specifications to maximize dashboard engagement and handle high throughput (27000 RU)

Software Engineering Intern, Appian

Tysons, VA, June 2020 - August 2020

- Worked on a cloud monitoring infrastructure team

Junior Software Developer, Optimal Satcom

Reston, VA, June 2019 - August 2019

- Created utility to plot population density and GDP per capita on satellite coverage maps

SKILLS

- Proficient in: *C#, C++, Python, JavaScript, Git, Java, MS SQL*
- Fluent in Dutch (native speaker) and conversant in German
- Swimming, competed at the Dutch National Open Championships in 2021, placed 18th in the country 2016 - Present