

Andrew Beams

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EDUCATION

University of Pennsylvania, Philadelphia, PA August 2019 – May 2021
Master of Science in Computer Science • 4.0/4.0

- Certificate in College and University Teaching
- Led the Security Reading Group, Member of the Distributed Systems Lab
- *TA for graduate courses*: Computer and Network Security (x2), Theory of Computation
- *Coursework*: Cryptography, Advanced Topics in Privacy and Anonymity, Advanced Topics in Cryptography
- *Privately tutored*: Discrete Math, Data Structures, Algorithms, Cryptography (among others)

University of Alabama, Tuscaloosa, AL August 2016 – May 2018
Bachelor of Science in Computer Science • 4.0/4.0

- Outstanding Senior Award in Computer Science
- *TA for undergraduate course*: Fundamentals of Computer Science II

EXPERIENCE

Visa Research, Austin, TX (Remote) December 2021 – Current
Senior Blockchain Engineer

- Primary developer of multiple mature research prototypes in the CBDC space
- Involved in proposal process for multiple central bank initiatives, including the Brazil LIFT Challenge
- Presented prototypes to multiple central banks, as well as external partners and internal leadership
- Led a team of researchers to develop a novel solution on Starknet

Southwest Research Institute, San Antonio, TX June 2018 – July 2019
Analyst (Software Engineer)

- Solely developed core features on a traffic management system for traffic monitoring and traffic signal optimization:
- Created authentication service which interfaced with client's existing infrastructure
- Created authorization service to be compatible with end-user traffic engineer requirements
- Created system-wide notification service to immediately propagate relevant events to traffic engineers' dashboards
- Designed monitoring service for detecting abnormal system events
- Researched feasibility of using WiFi positioning system for detecting pedestrians in crosswalks

Center for Advanced Public Safety, Tuscaloosa, AL March 2017 – May 2018
Student Developer

- Developed an internal tool for quickly adding authentication and authorization functionality to projects without requiring any additional development time
- Created additional plugins to support authenticating against Active Directory and to support 2 Factor Authentication via Google Authenticator

PROJECTS

SealPIR, github.com/abeams/SealPIR

- Updated Microsoft Research's Private Information Retrieval library to work with SEAL 6.3

PUBLICATIONS

Packet Scheduling with Optional Client Privacy, CCS 2021 (Virtual)

November 2021

Andrew Beams, Sampath Kannan, and Sebastian Angel

SKILLS

Programming Languages: C# (Dot net core), Python, C++, Java (Spring Boot), Solidity, Javascript (Angular), SQL

Technologies: Ethereum/web3, Javacard, Android TEE development, Starknet/Cairo, Blockchain, OpenAPI, Xunit, Redis, Docker, Kubernetes, MS SQL Server, Elastic Stack, Active Directory, Pandas, Spark, Wireshark, Microsoft SEAL

Languages: Japanese (JLPT N1 – Business Fluent)