MANAN MONGA

(857)-588-2272 ◇ mananmonga@gmail.com ◇ github.com/mananmonga ◇ mananmonga.github.io ◇ LinkedIn Manan-Monga

SUMMARY

Computer Science Master's graduate, proficient in Python, Cryptography, Data Engineering, and SQL. Building and maintaining large codebases, I have done cutting edge research on data privacy and provenance at scale.

SKILLS

Proficient	Python, Ruby, Rails, SQL, React-Native, JavaScript, CSS, Git, Ray, Test Driven Development, PyTest
Exposure	Solidity, C++, Linux, Django, Flask, Bash, AWS, PowerShell

WORK EXPERIENCE AND PROJECTS

Boston University Hariri Institute For Computing *Boston, MA*
Graduate Research Assistant *Apr. 2020 - Present*

- Led student research team building cross-platform prototype application using **React-Native** for privacy-sensitive **electronic contact tracing** for COVID-19 for better public health and to bring students back to campus
- Researched feasible sensor technologies for detecting exposures, implemented Bluetooth Low Energy chirps to detect for mobile application to detect exposures within COVID transmission range
- Investigated popular exposure notification frameworks with MA state authorities to ensure that contact-tracing framework they bought into was secure

Bare-Metal Marketplace *Boston, MA*
Cloud Engineering Project *Jan. 2020- May 2020*

- Designed an open marketplace system in an AGILE team as a series of **micro-services** for the MOC to buy and sell time on bare-metal nodes
- Architected and deployed **robust matching algorithm in Python** for the double-blind auction system
- Ensured quality code with **functional testing using PyTest** for all edge cases of bids and offers to ensure fair trading at **scale**
- Integrated backend with a SQL Database and CLI frontend with Flask to ensure end-to-end deployability

Python SQL operator library with Provenance and Explain-ability

- Engineered an operator library in Python to work with data pipelines to perform ETL operations at scale, keep track of **data provenance**
- Deployed library in **Ray** and turned all classes into efficient, distributed actors, improved recommendation engine performance by **70%**
- Incorporated explain-ability features with **LIME** and **SHAP** and performance metrics for each operation in pipeline with metric dashboard **Jaeger**

PolkaDot-IPFS

- Conceptualized and prototyped a bridge between Polkadot (a blockchain network) and IPFS (a decentralized and distributed data system) to simplify ownership signatures of files uploaded to the cloud
- Validated **user authentication and signing** with cryptanalysis of hashing and Message Authentication Codes

EDUCATION

Boston University Boston, MA
MS in Computer Science with a Specialization in Cybersecurity *Sep. 2019 - Jan. 2021*

- Active contributor to Hariri Institute, a convergence accelerator that initiates **data-driven research** for a better society

PES University Bengaluru, IN
BE in Electronics and Communications *Aug. 2015 - May. 2019*

- Mentored and instructed class of 30 students for subject of Pattern Recognition, mapped out course material, evaluated assignments, and led all group discussions; voted top 5 SME out of 35 by student vote

PUBLICATIONS

Software Defined Networks as a backbone for Large Scale IoT Networks

- Published a white paper on the benefits of using a Software-Defined Networking (SDN) with virtualized network functions as a backbone for large-scale IoT at **international security conference AISD 2019**
- Developed an architecure incorporating the security benefits offered in integrating the software defined paradigm into **large-scale IoT networks** focused on security.