VARUN RAMANI

(732) 672-5930
varun.ramani@gmail.com
https://varunramani.com
https://github.com/varun-ramani
https://linkedin.com/in/varun-ramani

EXPERIENCE

U.S. Naval Research Laboratory — **Software Engineering Intern** — **May 2023 – August 2023**

- Independently proposed and modernized C# Windows Forms application to web technologies
- Led redesign using React, Mantine, and TypeScript for enhanced user interactions
- Engineered new HTTP-based communication protocol to replace TCP, using Wireshark for analysis of existing protocol
- Designed and deployed Rust-based server for seamless protocol translation
- Implemented robust mTLS-based user authentication using Department of Defense's Common Access Cards (CAC)
- Collaborated on C# application extension, mastering C++ backend and C# frontend
- Developed Docker/Python-powered build systems for web app, Rust server, and C++ program, simplifying RPM package creation
- Created user-friendly deployment utility using Tauri, ensuring seamless software installation for non-technical users

Meta — **Software Engineering Intern** — **May 2022 – August 2022**

- Enhanced user privacy by transitioning user identifiers to hashed device IDs via contributions to Hack codebase.
- Conducted experiments to evaluate impact of privacy changes on identity matching backend. Built Python experimentation framework for streamlined deployment of similar trials by other developers.

FIRE @ University of Maryland — **Undergraduate Research Assistant** — **August 2020 – December 2021**

- Developed UNet-based ML model for LIDAR data semantic segmentation, achieving dense point classification within point clouds.
- Demonstrated project outcomes at an undergraduate research summit, showcasing successful contributions to LIDAR data analysis.

Code Ninjas Princeton — **Teacher** — **March 2019 – December 2019**

- Taught students aged 7–14 programming fundamentals through game development courses.
- Designed and led multi-day workshop on building NLP chatbots powered by Python/IBM Watson.
- Supervised, mentored, and guided groups of up to 25 students at a time as they built their software.

PROJECTS AND AWARDS

Memaid — **Best Social Good Hack / 91 teams** — **gh:varun-ramani/memaid**

- Integrated computer vision, speech to text, and NLP into a dementia aid.
- When someone introduces themselves to the user, the application memorizes their face *after only seeing it once* and associates it with their name. Furthermore, it listens to any subsequent conversation and stores relevant highlights.
- The next time the user meets this person, the application will automatically recognize them and relay their name / last conversation highlights to the user through any connected headphones or earbuds.

Maskif.ai — **First Place / 42 teams, YHack 2020** — **gh:varun-ramani/maskifai-server**

- Accessible computer vision-powered IoT product.
- Product helps businesses deal with anti-maskers during pandemic by intelligently triggering connected smart lock when unmasked individual approaches door; automatically unlocks door after they leave.
- Applied Python, Tensorflow, Flask, and Google Assistant SDK.

Intellicity — **Top 30 / 242 teams, PennApps 2019** — **gh:varun-ramani/intellicity**

- Uses crowdsourced information and computer vision to add rich, granular details to Google Maps; includes but is not limited to precise geolocation data for trash bins, bathrooms, safety hazards, and parking spots. Helps people navigate unfamiliar places with absolute confidence, instantly finding anything they need.
- Applied Dart/Flutter, Python 3, MongoDB, and Flask.

EDUCATION

College Park, MD — **University of Maryland** — **August 2020 – May 2024**

- B.S. in Computer Science. Expected Graduation: May 2024
- Cumulative GPA: 3.875 / 4.0
- Relevant Upper-Level Computer Science Courses: Algorithms, Machine Learning, Cryptography, Compilers, Computer Networks, Data Structures, Operating Systems, Data Science, Wireless Sensing
- Relevant Upper-Level Math Courses: Abstract Algebra, Linear Algebra, Calculus, Number Theory, Statistics

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, C/C++, Go, OCaml, Ruby, SQL, MATLAB
Frameworks: Flask, React, React Native, Flutter, Keras
Tooling and Systems: Git, AWS, Google Cloud Platform, Heroku, Docker, Linux
Libraries: pandas, NumPy, Matplotlib