

VARUN RAMANI

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EXPERIENCE

U.S. Naval Research Laboratory	Software Engineering Intern	May 2023 – August 2023
<ul style="list-style-type: none">Independently proposed and modernized C# Windows Forms application to web technologiesLed redesign using React, Mantine, and TypeScript for enhanced user interactionsEngineered new HTTP-based communication protocol to replace TCP-powered system, using Wireshark for analysis of existing protocolDesigned and deployed Rust-based server for seamless protocol translationImplemented robust mTLS-based user authentication using Department of Defense's Common Access Cards (CAC)Collaborated on C# application extension, mastering C++ backend and C# frontendDeveloped Docker/Python-powered build systems for web app, Rust server, and C++ program, simplifying RPM package creationCreated user-friendly deployment utility using Tauri, ensuring seamless software installation for non-technical users		
University of Maryland	Teaching Assistant (Intro Systems)	Jan 2023 – May 2023
<ul style="list-style-type: none">Led discussion sections with up to 40 students, fostering engaging learning environments.Graded hundreds of exams and worksheets meticulously, offering prompt and constructive feedback.Mentored numerous students during office hours, clarifying intricate concepts related to C, assembly, and operating systems internals.Achieved high exam averages in the section, indicative of effective teaching methodologies.		
Meta	Software Engineering Intern	May 2022 – August 2022
<ul style="list-style-type: none">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.		
University of Maryland	Teaching Assistant (Data Science)	Sep 2022 – Dec 2022
<ul style="list-style-type: none">Graded a substantial volume of projects and exams, maintaining accuracy and consistency.Assisted students during office hours, aiding comprehension of course material related to machine learning and data analysis.		
FIRE @ University of Maryland	Undergraduate Research Assistant	August 2020 – December 2021
<ul style="list-style-type: none">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.		

PROJECTS AND AWARDS

MemaId	Best Social Good Hack / 91 teams	gh:varun-ramani/memaId
<ul style="list-style-type: none">Integrated computer vision, speech to text, and NLP into a dementia aid.When someone introduces themselves to the user, the application memorizes their face <i>after only seeing it once</i> 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
<ul style="list-style-type: none">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.		

EDUCATION

College Park, MD	University of Maryland	August 2020 – May 2024
<ul style="list-style-type: none">Program of Study: B.S. in Computer ScienceGrade: 3.875 / 4.0Relevant Upper-Level Computer Science Courses: Algorithms, Machine Learning, Cryptography, Compilers, Computer Networks, Data Structures, Operating Systems, Data Science, Wireless SensingRelevant 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

