

Dhruv Gramopadhye '24 Double Comp. Sci + Math Major

(571) 524-3033

dgramopa@gmu.edu

<https://linkedin.com/in/dgramop>

<https://dgramop.xyz>

Truncated resume. The full version is available at: <https://dgramop.xyz/resume.pdf>

Skills

Rust, React, Python, NodeJS, ExpressJS, CouchDB, JSON APIs, SQL, CouchDB, MongoDB (and ORMs), Arduino, ESP32, STM32, PHP, HTML5, CSS3 (SASS), frontend JavaScript, C Programming, Java programming, Git (CLI), JIRA, IDA PRO, Systemd, Shell scripting, Figma, Wireshark, KiCad EDA, C++, SMD/THT soldering, Linux, MacOS, Ubuntu, Fedora, Software-Defined Radio

Experience

May 2022 - November 2022

Cvent Inc, Application Security Intern (Software Engineering Project)

- Elicited requirements after reaching out to stakeholders in my own and other departments
- Prototyped and validated mockups
- Designed and validated schemas for Postgres (SQL)
- Developed and user-tested functional frontend in JavaScript React and backend in Python Flask with JIRA and Slack integrations
- Deployed to AWS with Docker container
- Sustaining tool and implementing additional features as requested by team part-time over the semester
- **Skills:** Software Development, Flask, Python, ReactJS., Docker, SDLC

SEPTEMBER 2021 - PRESENT

passCS Inc, Founder & CEO

- Provide honor-code compliant mentorship through 1-on-1 and small group tutoring to help students achieve success and solidify learning
- Developed a web application with Rust backend with Stripe payment processing system for subscription billing
- Grew company to 12 non-exempt employees, helping 70+ students pass their classes
- **Skills:** React, Rust, Stripe integration, Tutoring, Business Management, Git

JANUARY 2022 - PRESENT

Mason Experimental Geometry Lab, Research Assistant

- Researched methods to sample very large polyforms from a uniform distribution stochastically, with good runtime
- Brought runtime from most naive solution for sampling ($O(n^n)$) to polynomial time with a special implementation of the Metropolis Hastings algorithm
- Analyzed generated polyform's topology for features (holes)
- **Skills:** Research, Stochastic Methods, Markov Chain Monte Carlo

JUNE 2018 - JUNE 2020

The MITRE Corporation, Summer Technical Aide (Cyber Research)

- Designed and coded a decentralized blockchain voting system and network from scratch using NodeJS.
- Implemented voter privacy protections and voter registration
- Developed the system to have transparency while maximizing compliance with existing privacy laws and policies.
- Modified Karta to reverse engineer 100,000 instances of malware code to identify statically-linked, open-source libraries and versions
- Analyzed reports and generated visuals from the output of this tool. MITRE has approved this work for release to open source
- **Skills:** NodeJS, Blockchain, peer-to-peer networking, production and delivery of Technical Briefings, Git, Reverse engineering with IDA, Python development

April 2022 - Present

Mason Innovation Exchange, Makerspace Associate

- Organize and instruct the “Battle Bots” component of our beginner-friendly “Robot Night”
- Mentor students with class and personal projects they bring to the makerspace
- Inspect 3D printing slices and configuration, maintain equipment and makerspace
- Promote the makerspace and its capabilities to fellow STEM students via both social media and traditional advertising techniques
- **Skills:** C++, FDM 3D Printing, Laser Cutting, Woodshop, Robotics, Event Coordination

April 2022 - Present

George Mason University, Undergraduate Teaching Assistant

- Mentored fellow students in C Programming labs
- Responded to online questions in a StackOverflow-style format
- **Skills:** Mentorship, Tutoring

Education

AUGUST 2020 - MAY 2024

George Mason University - *Double Computer Science & Mathematics Major*

Full-tuition University Scholars merit scholarship. 3.77 GPA. Honors college and accelerated masters student. Transcript available upon request.

Completed an industry practicum project to track COVID-19 test supply chain choke points that was used to brief the White House. Classes in Numerical Analysis, Machine Learning, Real Analysis, Systems Programming, Adv. Linear Algebra

Oakton High School - 4.33 GPA, Comp. Sci. department award (one per graduating class). AP Scholar with distinction, VA Scholastic Excellence, VA Mathematics and Technology, Governor of Virginia Academic Excellence, Board of Education Excellence in Civics Education.

Awards

HooHacks (UVA Hackathon) Accessibility Winner 2022, Hackoverflow First Place (GMU Hackathon) 2022, HooHacks Sustainability 2nd place 2020, Microsoft Garage Invitee 2022, National Governors Association CTF 2nd Place, HS CTF 2nd Place, Clinton Global Initiative Semifinalist, Cyberpatriot Platinum. Hurricane Electric IPv6 Certified.

Vulnerabilities

Java EE JavaMail - Was able to inject CRLF sequences (similar to CWE-93) to take control of an SMTP connection

Blackboard - Found vulnerability that allowed SMTP hijacking (related to JavaMail vulnerability)

Gravity Forms - See one of my discoveries in the Google Hacking DB at exploitDB. This vulnerability in a WordPress form can leak private information, like credit card information. <https://www.exploit-db.com/ghdb/4963>

Contributions

White House Supply Chain: Built a supply chain choke point identification and visualization tool in Python with MITRE in an industry practicum to respond to the ongoing COVID-19 supply chain crisis. Tool was used to by MITRE brief White House Staff about the status and causes of the COVID-19 test shortage

Stackoverflow: On one popular platform called Stackoverflow.com my answers have helped 432,000 users. URL to my statistics: <https://stackoverflow.com/users/3987475/dgramop>

Open Source Code: I occasionally contribute fixes and code to open source projects on GitHub. One of my contributions fixes critical bugs in Rust’s async-stripe

(<https://github.com/arlyon/async-stripe>), an open-source library for interoperating with the Stripe payment processor. Additionally, my fix to code used by the Veteran’s Affairs (US Government) was accepted on GitHub (via Gerrit). See my profile and contributions: <https://github.com/dgramop>

Mason Ambassador (Tour Guide): Permanently changed the official tour route and admissions events by adding an inside tour of the Makerspace and connecting leadership from both departments.