Rory Hemmings

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Education:

University of California Los Angeles (Sep 2021 - Jun 2025)

Cumulative GPA: **3.91** B.S. Computer Science

Relevant Coursework: Data Structures and Algorithms, Software Construction, Operating Systems, Programming Languages, Digital Systems Design, Computer Organization, Computer Networking, Computer Graphics

Extracurriculars: Upsilon Pi Epsilon CS Honor Society, Association for Computing Machinery, Marching Band, Climbing Club

Work Experience:

Software Engineering Intern, NASA Jet Propulsion Laboratory - Pasadena, CA (Jun 2023 - Aug 2023)
- Implemented features and tests for Python script suite used by Rover Planners to operate the Curiosity Mars Rover
- Wrote camera model image processing scripts, automatic documentation infrastructure, and various bug fixes
- Eliminated test suite bottlenecks increasing overall performance by up to 50% and up to 96% for certain modules

Chief Technical Officer, Milkyway Delivery - Los Angeles, CA (Aug 2022 - present)
- Designed and implemented scalable infrastructure used to manage deliveries, drivers, and customers
- Built web application using Express.js, React.js, and Stripe api to automate process of delivery requests
- Managed small team of engineers and wrote documentation for entire platform

Lead Software Engineer, UCLA Mock Trial - Los Angeles, CA (Jul 2022 - Jan 2023)
- Designed and built a scalable cost-efficient web platform to store and manage videos, documents, contacts, and resources, using Javascript and Python
- Wrote Python scripts to centralize ~5 terabytes of videos and documents in the cloud
- Created search engine to query videos by transcriptions and other metadata
- Built a multithreaded video transcriber utilizing machine learning under major CPU, RAM, and storage constraints

Cybersecurity Officer, ACM at UCLA - Los Angeles, CA (Nov 2021 - present)
- Hosted educational workshops on cybersecurity topics such as malware development, SQL injection, XSS, File Forensics, and Linux Fundamentals
- Competed and wrote CTF challenges for PBR, UCLA's competitive cybersecurity CTF team

Projects:

Vortex, Game Engine (C++, SFML, Box2D)
- Manages and updates up to 5000 entities and interactions per frame
- Data-oriented Entity-Component System greatly increases performance over traditional object-oriented approach
- Provides API to manage assets, states, user input, physics, and rendering

Router Software (C, C++)
- Simulates IP, TCP, and UDP protocols across LAN and WAN connections using NAPT
- Concurrently forwards packets between multiple socket connections

Sheet Music Transcriptions Platform (Javascript, Express.js, HTML, CSS, SQLite, Passport.js)
- Stores user uploaded PDFs and images along with descriptions and associated tags
- Supports fuzzy and keyword search, likes, and comments on uploaded transcriptions
- Free and open source alternative to existing sites, allowing community growth alongside learning

Skills:

Programming Languages: C++, C, Python, Javascript, Java, x86/x64 Assembly, OCaml, HTML, CSS, Prolog

Tools, Frameworks, and Technologies: Linux, Git, Bash, Node.js, Express.js, React.js, Flask, Jenkins, REST APIs, GDB, AWS, Unity, PostgreSQL, MongoDB, SQLite, Google APIs, Stripe API, vim, regex