Siddharth Narsipur

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EDUCATION

University of Rochester   Rochester, NY
Bachelor of Science in Computer Science; GPA: 3.8, Dean's List   *Aug. 2022 – May 2026*
- **Coursework:** Operating Systems, Data Structures & Algorithms, Computer Architecture, Computer Vision, Artificial Intelligence, Programming Languages, Theory of Computation

EXPERIENCE

Undergraduate Research Assistant   May 2024 – Present
URCS Bear Lab   *Rochester, NY*
- Developed a novel tool for Meta Quest headsets with Unity and C# that can adapt VR user interfaces between multiple environments, alleviating the need for repeated manual adjustments and reducing setup time by 30%.
- Implemented a linear programming model in Python using the Gurobi solver that considers 50+ input parameters and optimally places virtual elements in 3D space while preserving visibility and spatial utility.
- Created an intuitive VR application for HCI research studies that allows subjects to simultaneously view up-to 20 virtual rooms at once and switch between them with intuitive controller actions.

Software Engineer Intern   May. 2022 – July. 2023
LiquiDonate Inc.   *San Francisco, CA*
- Enhanced marketplace by integrating sell & order features into REST and GraphQL APIs for use by large retailers.
- Built a scalable authentication microservice in Go that periodically revokes outdated API credentials and creates new ones
- Deployed unit tests with the Ginkgo framework and set up performance logging for 10 APIs on Google Cloud using Sentry.
- Automated end-to-end inventory tracking for 100,000+ SKUs with complex variations using Shopify and Stripe webhooks.
- Designed a highly requested admin dashboard in React that displayed updates for 15,000+ real-time shipping movements.

Hajim School of Engineering   Jan. 2023 – Present
Teaching Assistant   *Rochester, NY*
- Hold office hours to improve lecture understanding and guide students with assignments for Data Structures, AI courses.

PROJECTS

3D Texture Map Generation | *Python, PyTorch, CUDA, Bash scripting*   Github
- Constructed a computer vision pipeline using the ControlNet algorithm with Stable Diffusion models to generate highly photorealistic PBR texture maps from photographs, achieving a 20% lower error rate than open-source models.
- Trained a deep learning model on NVIDIA A100 GPUs using the MatSynth dataset. Employed memory efficient attention, aggressive data pre-processing, and CUDA acceleration to achieve fast training and <5s inference for large images.

Group4Good (Built @ HackMIT) | *Python, Flask, React, IRIS Vector DB*   Github
- Built a full-stack application with a Python-Flask backend to securely analyze purchase data and match common interests among groups with relevant non-profits based on K-Means clustering of vector embeddings generated by a sentence model.
- Leveraged Capital One's Nessie API and InterSystem's IRIS Vector Search to identify and recommend charities based on relevant transaction patterns, attaining 92% user-charity match satisfaction.

Command Interpreter | *C, Linux, Bash*
- Developed a fully-fledged command shell/interpreter that supports pipes, signals, running multiple foreground/background processes in parallel, moving between them, and gracefully terminating children.

Nearvents | *Angular, TypeScript, Ionic, Firebase*   Github
- Created a college event management app used by 500+ students with real-time updates powered by Firestore.
- Implemented a location-based recommendation feed using Capacitor Geo-location API that increased engagement by 40%.

Programming Language Compiler | *C, Java, Rust, Antlr*
- Developed a full compiler for a C-like language, featuring an Abstract Syntax Tree (AST) generator built with the ANTLR framework and a code generation module that outputs Java Virtual Machine (JVM) assembly code.

TECHNICAL SKILLS

Languages: Java, Python, Go, C, C#, SQL, Postgres, JavaScript, HTML/CSS, TypeScript
Frameworks: React, Node.js, Flask, Angular, Ionic, Next.js
Developer Tools: Git, Docker, Firebase, Google Cloud Platform, Scrum, Agile, Kubernetes, Flask, Unity, OpenCV