CHARVI SHUKLA

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Education

University of California, San Diego — **La Jolla, CA**

B.S. in Mathematics-Computer Science — Fall 2021- Spring 2025

B.S. in Cognitive Science (specialization in Machine Learning and Neural Computation) — Fall 2023 - Spring 2025

M.S. in Computer Science — Fall 2025 – Spring 2027

Relevant Coursework

Software Engineering, Algorithms, Intro to ML, Computer Vision, Advanced Data Structures and OOD

Technical Skills

Languages: Python, C/C++, Java, JavaScript, ARM, System Verilog
Developer Tools:Git, Docker, Jupyter Lab, VS Code, Gradle, Circle CI
Frameworks, Databases: Linux, Pytorch, React, Express, MongoDB, Firebase Firestore, AWS S3, DynamoDB
Libraries: Tensorflow, Pandas, CUDA, OpenCV, Numpy, Matplotlib, SciKit Learn, JavaFX

Experience

Software Engineering Intern — **November 2023 – April 2024**

WiseCounsel.ai — *Remote*

- Developed core **Command Line Interface** for WiseCounsel's negotiation platform, facilitating bi-directional communication between clients and counterparties using **python**
- Designed and engineered a **deterministic state machine** to enable **verification** and **E2E testing** of negotiation workflow
- Orchestrated multi-clause negotiations by managing **10+** inputs/outputs within a agreement lifecycle from **4** distinct AI Agents to reconstruct legal agreements

Instructional Assistant — **March 2022 – Present**

UC San Diego, CSE and Mathematics Department(s) — *La Jolla, CA*

- Conducted **4.5** hours of weekly tutoring for **300+** students, debugging **C** and **ARM Assembly** code and re-iterating core concepts, Created a test suite in C for Programming assignment testing and grading
- Assisted Teaching assistants in hosting weekly **linear algebra** discussion sessions for **100+ students**

Undergraduate Research Assistant — **August 2023 – Present**

Advanced Robotics and Controls Lab (ARClab) — *La Jolla, CA*

- Processed a large medical-assessments dataset and used for **LoRA finetuning** to fine tune mainstream LLMs
- Deployed CUDA based **Docker** containers to efficiently train models using the PyTorch DataParallel class, while leveraging **4 GPUs** in parallel
- Fine-tuned and debugged Lepard point cloud matching model on a physically constrained simulation dataset of deformed point clouds and implemented custom visualization algorithms in python to assess match quality

Extracurricular Activities and Projects

PantryPal | *Java, JavaFX, Gradle* — **September 2023 - December 2023**

- Led a team of **6**, developed a voice-activated recipe generation application using **JavaFX** and **Gradle**, powered by ChatGPT and Whisper API
- Ensured robust performance through comprehensive testing, including **Java unit testing**, **test and build automation using GitHub**, behavior-driven development **(BDE)** testing, and end-to-end **(E2E)** testing with mocking

Association of Computing Machinery at UC San Diego — **September 2022 – April 2024**

Hack Technical Events Director — *La Jolla, CA*

- Developed a **6-week** workshop series on **MERN** Stack app development, including an online textbook and a type-racer game for teaching. Integrated **Jest** for backend unit tesing
- Led a **two-part workshop** on building Chrome extensions which summarize recorded lecture transcripts using Google AI's Gemini-Pro API and **Node.js**

Enhanced Vehicle Detection and Counting Using YOLOv8 | *Conference Presentation* — **August 2024**

- Agrawal, A., Shukla, C., & Shukla, P. (2024). "Enhanced Vehicle Detection and Counting Using YOLOv8 with Augmented Data and Optimized Object Grouping." Presented at the **MANIT Bhopal Conference**, to be published in **Springer Book Series**
- Proposed a novel object grouping mechanism and pre-processing techniques, which lead to **reduction** in inference time from **38** to **25** ms