

# Aditi Thanekar

📞 510-556-7315 📩 [athanekar@ucsd.edu](mailto:athanekar@ucsd.edu) 🌐 [aditithanekar.github.io](https://aditithanekar.github.io) 📡 [aditithanekar](https://aditithanekar.com) 💬 [aditi-thanekar](https://aditi-thanekar.com)

## Education

### University of California - San Diego

*MS in Computer Science*

La Jolla, California

September 2025 - December 2026

### University of California - Riverside

*BS in Computer Science, GPA: 3.76 / 4.0*

Riverside, California

September 2022 - June 2025

## Experience

### Lawrence Livermore National Laboratory

Livermore, California

*Computing Intern - National Ignition Facility | C++, CUDA, Linux, RAJA, GDB*

June 2024 - Present

- **Summer 2025:** Fixed fundamental GPU execution bugs in RAJA-enabled laser simulation codebase and sped up FFTs
  - \* Refactored **3000+** lines of C++ code to resolve device–host pointer issues in GPU loops, enabling stable execution
  - \* Achieved **3.1× speedup** on GPU by integrating CuFFTW; migrated to Unified Memory, profiled w/Nsight Systems
- **Summer 2024:** Developed new component with C++ to group existing laser simulation components
  - \* Reduced Qt cold start time by **30%** and enabled reuse of component chains to cut pipeline creation time by **60%**
  - \* Incorporated into the March 2025 **production release**.
- Collaborated closely with physicists to translate scientific requirements into testable features to meet research goals
- Authored LaTeX documentation, led live training for ~20 users, and presented work at poster symposium

### Systems Optimization + Computer Architecture Lab

Riverside, California

*Undergraduate Researcher - GPU Computing | Advisor: Daniel Wong*

January 2025 – June 2025

- Ported MiniFE, an open-source finite element analysis code, from CUDA to AMD HIP for compatibility across GPUs
- Debugged race conditions and segmentation faults using cuda-gdb and rocgdb to trace memory errors
- Investigated warp divergence and memory coalescing inefficiencies through profiling tools (nvprof, rocprof)

### University of California, Riverside

Riverside, California

*Chief Grader | Data Structures and Algorithms - Professor Patrick Miller*

April 2023 – June 2025

- Managed gradebook for **1000+** students, and directed tasks amongst 12 people ensuring timely release of grades
- Reduced input time from **1 hr to 7 min**/assignment, by creating Python program mapping scores to Canvas gradebook
- Conducted **200+ C++ code reviews** and live demos, assessing readability, efficiency, memory usage and best practices

## Projects

### Ray Tracer | C++, Valgrind, GDB

- Implemented ray tracer able to intersect spheres, planes and triangle meshes in 3D plane and render to a 2D image
- Integrated multiple shaders: flat, Phong(diffuse, specular, ambient), reflective, transparent, and texture mapping

### Packaroo Express | Python, Tkinter

[github.com/aditithanekar/packarooExpress](https://github.com/aditithanekar/packarooExpress)

- Devised solution to minimize crane movement for loading, unloading, and balancing containers at a port using A\* search
- Developed and integrated a Python backend with a Tkinter GUI for interactive container operations with visualizations

### Noa | Flutter, Firebase, EmailJS, Git, GitHub

[devpost.com/software/noa-42yern](https://devpost.com/software/noa-42yern)

- Built mobile app to locate businesses, schedule appointments, send email confirmations, and secure Firebase Auth login

### My Favorite Story | C++, Git, GitHub, Valgrind, GTest

[github.com/aditithanekar/My-Favorite-Story](https://github.com/aditithanekar/My-Favorite-Story)

- Implemented classes & tests for adventure game, debugged with Valgrind; led scrum meetings, delegating tasks among 4

## Leadership

### Girls Who Code

Fremont, California

*President/ WHS Hackathon Director*

August 2020 – June 2022

- Created 9 lesson plans and taught web development at meetings to over 25 members using HTML, CSS and Figma
- Organized and emceed a school-wide hackathon for online(2021) and in-person(2022) and mentored groups

## Technical Skills

**Languages:** C++, Python, Java, CUDA, HIP, HTML, CSS, R, Swift, Flutter,

**Developer Tools:** Git, GitHub, VSCode, GTest, Firebase, GDB, Nsight Systems

**Design Tools:** Adobe Illustrator, Figma, SolidWorks, Autodesk Maya

**Relevant Coursework:** Parallel Programming, GPU Programming, Computer Graphics, Computer Architecture, AI