

Aditi Thanekar

✉ athanekar@ucsd.edu 🌐 aditithanekar.github.io 🔄 aditithanekar 📄 aditi-thanekar

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

Advanced Micro Devices (AMD)

Incoming Compiler Engineering Intern - Triton

San Jose, California

Summer 2026

- Selected for Triton team, focusing on GPU kernel optimization and compilation for ML frameworks

Lawrence Livermore National Laboratory

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

Livermore, California

June 2024 - November 2026

- **Summer 2025:** Fixed critical GPU execution bugs in RAJA-enabled laser simulation codebase and optimized FFTs
 - * Achieved **3.1x speedup** on GPU by integrating CuFFTW; migrated to Unified Memory, profiled w/Nsight Systems
 - * Refactored **3000+ lines** of C++ code to resolve device-host pointer issues in GPU loops, enabling stable execution
- **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**.
- Authored LaTeX documentation, led live training for ~20 users, and presented work at poster symposium

Systems Optimization + Computer Architecture Lab

Undergraduate Researcher - GPU Computing | Advisor: Daniel Wong

Riverside, California

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 rocdbg to trace memory errors
- Investigated warp divergence and memory coalescing inefficiencies through profiling tools (nvprof, rocprof)

University of California, Riverside

Chief Grader | Data Structures and Algorithms - Professor Patrick Miller

Riverside, California

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

3D Gaussian Splatting Renderer | Python, PyTorch

github.com/aditithanekar/3D-gaussian-splatting

- Implemented end-to-end 3D Gaussian Splatting pipeline from scratch with self-captured multi-view dataset using COLMAP SfM point cloud for 3D reconstruction and novel view synthesis
- Built differentiable renderer with covariance projection and depth-sorted alpha blending for Gaussian splatting
- Improved reconstruction quality via photometric loss with densification, pruning, and background masking

Packaroo Express | Python, Tkinter

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

FPGA Acceleration with HLS | C++, Vitis HLS, PYNQ-Z2

- Implemented hardware-accelerated kernels using High-Level Synthesis (HLS)
- Optimized latency and throughput via loop unrolling, pipelining, and memory partitioning
- Deployed designs on PYNQ-Z2 FPGA and analyzed performance vs CPU implementations

Leadership

Girls Who Code

President/ WHS Hackathon Director

Fremont, California

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

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