

Tara Sawrikar

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EDUCATION

Harvey Mudd College, Claremont, CA

B.S Computer Science and Mathematics | Dean's List

Expected May 2029

Relevant Coursework: Principles of Computer Science, Linear Algebra, Discrete Mathematics, Differential Equations, Engineering Systems, Mechanics and Wave Motion

TECHNICAL SKILLS

Languages: Python, C++, C#, TypeScript, JavaScript, Java

Graphics & DCC: OpenUSD, OpenGL, GLSL, Autodesk Maya, Blender, Unity

APIs, Libraries & Tools: Maya Python API, Unity Editor API, GLFW, GLEW, GLM, Dear ImGui, React, Vitest, WebAssembly, CMake, Git

INTERNSHIP EXPERIENCE

Software Engineering Intern | **QSimulate**, Boston, MA

May 2026 – Aug 2026

- Developed production frontend features for interactive quantum-simulation results, using TypeScript, WebAssembly, and JSON-based scientific data to render molecular structures and orbitals.
- Led implementation of Vitest screenshot-testing infrastructure, establishing visual regression coverage across the full frontend; the framework was merged and adopted in the production repository.
- Authored component and integration tests for complex scientific workflows while contributing approximately 200 GitHub contributions across the production codebase.

Engineering Intern | **Clean Properties Engineering, Inc.**, Sudbury, MA

Jun 2025 – Aug 2025

- Produced site-assessment reports and analyzed environmental data supporting wastewater treatment projects.

Research Intern | **Weston Observatory**, Boston College

Summers 2023 & 2024

- Maintained earthquake-monitoring systems and restored laboratory infrastructure supporting seismic data collection.

SELECTED PROJECTS

OpenUSD Physically Based Renderer | C++, OpenUSD, Blender, OpenGL, GLSL | 

2026

- Architected a modular C++17 rendering engine that imports Blender-authored OpenUSD scenes through the official OpenUSD SDK and renders them in real time with OpenGL.
- Implemented USD stage traversal and scene reconstruction for meshes, hierarchy, transforms, normals, UVs, material assignments, and UsdPreviewSurface properties.
- Built a hierarchical scene graph, camera and material systems, and a Cook–Torrance PBR pipeline using GGX, Smith geometry, Schlick Fresnel, and metallic/roughness shading; added Dear ImGui diagnostics.

Production Asset Publisher for Autodesk Maya | Python, Maya Python API, OpenUSD | 

2026

- Developed an artist-facing publishing pipeline that validates Maya scenes, blocks invalid publishes, automates asset versioning, captures thumbnails, generates JSON metadata, and exports Maya and OpenUSD files.
- Separated validators, exporters, publishers, configuration, metadata, thumbnail capture, and UI into maintainable modules; validated naming, root selection, transforms, history, duplicate names, and empty groups.

Unity Asset Validation Framework | C#, Unity Editor API | 

2026

- Created an extensible Unity Editor tool that scans textures, materials, and prefabs for production-pipeline issues, with modular validators, searchable results, asset selection, quick fixes, health analytics, and CSV reporting.

RESEARCH

Student Researcher | FICUS Lab, Harvey Mudd College

Jan 2026 – Present

- Analyze eddy-covariance CO₂ flux and rainfall data in Python to study rainfall-triggered respiration pulses; presented an independent-study poster recognized with the Outstanding Student Poster Award.

Student Researcher | Dr. Mahesh Parija, Virginia Tech

Nov 2023 – May 2025

- Analyzed how the Monsoon Season in South Asia impacts the frequency and magnitude of earthquakes in the Himalayan region in order to find patterns and help communities in areas of risk

LEADERSHIP

Activities: Leadership Team, Gender Equity in Math | Treasurer, Harvey Mudd Racing | Leadership Team, Adaptive Design at Mudd | Leadership Team, Harvey Mudd Science Day | Grader + Tutor, CS005

Awards: Bonnie Scholarship Award (25) | The Village Bank Scholarship (25) | Girl Scout Gold and Silver Award (24)