

Harshil Patel

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EDUCATION

MS in Computer Science	Sept 2025 - Present
University of California - Davis, CA	GPA: 4.0/4.0
BS in Computer Science	Sept 2019 - June 2023
University of California - Davis, CA	GPA: 3.6/4.0

WORK EXPERIENCE

- Graduate Student Researcher** | *University of California - Davis* Sept 2025 - Present
- Co-authoring a tooling paper accepted to ISPASS 2026, advancing reproducible research workflows for computer architecture simulation
- Software Developer** | *University of California - Davis* August 2023 - July 2025
- Contributed 200+ commits and 5,000+ lines of code to gem5, a leading computer architecture simulator with 5,500+ citations, thousands of users, and adoption by industry leaders including AMD, Arm, and Google.
 - Designed and automated workflows for building disk images, workloads, and benchmark suites, now used widely by the research community.
 - Drove migration of gem5 resources from Google Cloud to Microsoft Azure, reducing storage and egress costs by over 50% while improving maintainability.
 - Designed and deployed serverless API endpoints on Azure Functions, for a more scalable and maintainable solution.
 - Supported the gem5 community by triaging GitHub issues, answering technical questions on Slack and mailing lists, and onboarding new contributors.

PROJECTS

- NAAMSE** | *GitHub* | *website* | *arXiv paper* Nov 2025 - Feb 2026
- Won 2nd place for Agent Safety at the UC Berkeley RDI AgentBeats competition
 - Built the behavioral scoring engine for a security red-teaming tool that uses evolutionary algorithms to autonomously generate adversarial prompts against LLMs
 - Validated attack effectiveness by running multiple LLMs against the framework; results informed scoring rubric refinements
- HASHIRU** | *GitHub* | *arXiv paper* Mar 2025 - Aug 2025
- Co-built a budget-aware multi-agent orchestration framework that dynamically decomposes tasks and delegates to specialized agents, minimizing cost by reserving expensive models for tasks that require them.
 - Engineered the resource estimation module, which scores agents by capability and cost so the central orchestrator can make informed routing decisions in real time.
- gem5 Vision** | *resources.gem5.org* | *github.com/gem5/gem5-resources-website* Jan 2023 - June 2023
- Built the infrastructure for gem5 Resources as a senior design project; currently serves 1.2M+ database requests and 20,000+ website visitors per month.
 - Implemented advanced search and a semantic versioning + categorization system, significantly improving resource discoverability.
 - Expanded gem5's database support by integrating local and remote JSON files as well as MongoDB, improving efficiency and user accessibility.
 - Published as a part of ISCA 2023: gem5 Workshop.

SKILLS

Python, JavaScript, C++, C, Flask, SQLite, Docker, MongoDB, LangChain, React, Next.js