

Siddarth Mamidanna

EDUCATION

University of California, Santa Cruz

B.S. Computer Science; Minor in Applied Mathematics & Computer Engineering (Junior)

Santa Cruz, CA

Sep 2022 – Present

- Advisors: Prof. Leilani H. Gilpin (AIEA Lab), Dr. Yilun Zhou
- Research focus: interpretability and safety of large language models

RESEARCH EXPERIENCE

AI Explainability & Accountability Lab @ UC Santa Cruz

Undergraduate Researcher

Santa Cruz, CA

May 2023 – Present

- **First-author EMNLP 2025 main-conference paper:** *All for One: LLMs Perform Computation at the Last Token's Residual Stream with Information Transferred from Other Tokens*. **Entirely designed experiments, built full PyTorch codebase, and ran experimental suite across models.**
- Co-first author preprint: *Can Large Language Models Explain Themselves?* (**100+ citations**). Implemented evaluation suite for self-generated explanations and baselines; reproduced results across datasets & ran large scale experiments across models.
- Developed LLM mechanistic interpretability tooling (activation patching, token-wise interventions, ablations) and analysis notebooks supporting paper findings; open-sourced codebase.
- Compute lead: **managed compute with Kubernetes & Docker**; set up conda/pip workflows, scheduled jobs, monitored utilization, and unblocked GPU workflows.

USC Institute for Creative Technologies

Research Intern

Los Angeles, CA

Jun 2024 – Aug 2024

- Co-first author paper accepted to AIED 2025 Workshop *Fine-tuning for Better Few Shot Prompting: An Empirical Comparison for Short Answer Grading*
- Extracted and cleaned OpenTutor data; created an augmented dataset with synthetic examples.
- **Fine-tuned open-source LLMs with QLoRA** and evaluated against closed-source baselines; built end-to-end evaluation pipeline (metrics, ablations, reporting).

PUBLICATIONS

Reverse chronological order. *Equal contribution.

C: conference. **W**: workshop. **P**: pre-print. Highlighted work.

- C1** Siddarth Mamidanna, Daking Rai, Ziyu Yao, Yilun Zhou. *All for One: LLMs Solve Mental Math at the Last Token With Information Transferred From Other Tokens*. Empirical Methods in Natural Language Processing (EMNLP), 2025. PDF.
- W1** Joel Walsh*, Siddarth Mamidanna*, Benjamin Nye, Mark Core, Daniel Auerbach. *A Comparison of Fine-Tuning and Few-Shot Approaches for AI-based Short Answer Grading*. AIED Workshop, 2025. PDF.
- P1** Shiyuan Huang*, Siddarth Mamidanna*, Shreedhar Jangam, Yilun Zhou, Leilani H. Gilpin. *Can LLMs Explain Themselves? A Study of LLM-Generated Self-Explanations*. arXiv, 2023. PDF.

WORK EXPERIENCE

HeyMarin.ai

Founder & CEO

Palo Alto, CA

Aug 2025 – Present

- Backed by MCHN Ventures, built an **email-native AI assistant from zero to MVP**; architected a multi-tenant, serverless backend on AWS (SES inbound/outbound, API Gateway, Lambda, S3, RDS/Postgres, CloudFormation/SAM, IAM).
- Implemented reliable plus-addressing and task routing; **built vector DB-backed RAG pipelines and self-hosted the embedding model for retrieval.**
- Led a 4-person team across product, infra, and design; ran lean user discovery; onboarded initial pilot users and iterated on workflows.

MCHN Ventures

Hacker-in-Residence / Intern

Palo Alto, CA

Jun 2025 – Aug 2025

- Prototyped **conversational agentic AI systems for mobility** in collaboration with a tier-1 auto manufacturer; delivered live demo on an in-vehicle rig.
- Built real-time multi-agent orchestration (tool use, memory, streaming I/O) and evaluation harnesses; incubated the idea that became HeyMarin.ai.

Overture Maps Foundation

Machine Learning Intern (Academic)

Santa Cruz, CA

Mar 2025 – Jun 2025

- **Developed multimodal pipeline to extract and annotate business entities from street-level imagery** (Mapillary);
- Parsed names, geocoordinates, and information from imagery with high precision to annotate location metadata
- Delivered a clean, extensible codebase for imagery-based annotation/validation; **collaborated with TomTom, Meta, Microsoft, and GeoSpark** through UCSC CRWN 102 Corporate Innovation Lab.

HONORS & AWARDS

- **Outstanding Undergraduate Researcher Award (Honorable Mention):** Computing Research Association
- **Dean's Award:** 1 of 10 undergraduates to be recognized for outstanding research work.
- **Dean's Honors List:** UC Santa Cruz (2023, 2024, 2025).
- **SigmaHacks I, First Place:** Built CNN-based automated security checkpoint prototype (QuickPoint).