

Aniruddhan Ramesh

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EDUCATION

University of Cincinnati

Bachelor of Science in Computer Science; Minor in Mathematics

Class of 2027

GPA: 3.997

Selected Coursework: Probability and Statistics, Linear Algebra, Multivariable Calculus, Differential Equations, Discrete Structures, Design and Analysis of Algorithms, Artificial Intelligence, Data Structures, Operating Systems

In progress (Fall 2026): Applied Linear Algebra, Intelligent Systems, Theory of Formal Languages

PUBLICATIONS AND PRESENTATIONS

1. **A. Ramesh**. Diagnosing Refusal Failures Under Tool Schemas. *Under review, ICLR 2027*.
2. **A. Ramesh**, et al. AI-based Text Summarization and Pilot Evaluation of Oncology Discharge Notes using MIMIC-IV-Ext-BHC. *AMIA 2026 Annual Symposium*, oral presentation, November 2026.
3. R. Shang*, C.-M. Androna*, O. Menis Mastromichalakis, Y. Feng, **A. Ramesh**, et al. AURA-Eval: Evaluation Framework for Acting Under Risk Awareness in LLM Agent Trajectories. *arXiv preprint*, arXiv:2609.06783, 2026.
4. S. Limaye*, **A. Ramesh***, A. Zhou*, et al. From Tokens to Semantics: The Emergence and Stabilization of Polysemanticity in Language Models. *Mechanistic Interpretability Workshop at NeurIPS 2025*. *Equal contribution.
5. D. T. Y. Wu, M. Suharwardy, **A. Ramesh**, et al. Agile User-Centered Design of a Clinical Research Project Management System in a Pediatric Health Institute. *ACI Open* 9(2), 2025. Presented as a podium talk at the *AMIA 2024 Clinical Informatics Conference*.

PROFESSIONAL EXPERIENCE

iCDCU Lab, Bioinformatics Software Engineer, Cincinnati, OH

Jan 2023 - Present

- Implemented a Flask-based clinical research management system for a pediatric heart institute that scored 88.65 and 87.1 on the System Usability Scale across two evaluations.
- Built supervised fine-tuning and on-policy distillation pipelines that turn MIMIC-IV clinical notes into patient-friendly summaries, raising groundedness from 44.5% to 62.6% and readability from 0.5% to 92.4% on 500 held-out admissions.
- Optimized a machine learning pipeline for a medical residency dashboard, reducing training time by 90%.

Oumi, Machine Learning Engineer Intern, Seattle, WA

Jan 2026 - Aug 2026

- Built reinforcement learning infrastructure and executable environments (SQL databases, cloud browsers, LLM-simulated and stateful tools) to train and evaluate LLM agents on multi-step tool use.
- Built a tool-use data synthesis pipeline that generates multi-turn tool-calling trajectories grounded in executable environments for supervised fine-tuning.
- Co-authored AURA-Eval, an agent safety benchmark of 1,249 risk scenarios evaluated on 20 models, building its evaluation pipeline and running the judge-robustness studies that validated its LLM judges.
- Developed interpretability tooling (linear probes, difference-of-means vectors, activation and subspace patching) to diagnose safety failures and fine-tuning dynamics.
- Built an MCP server that lets AI agents use Oumi's stack to build and execute end-to-end ML pipelines autonomously.

AlgoVerse, AI Research Intern

Jun 2025 - Apr 2026

- Co-first-authored a NeurIPS 2025 workshop paper tracking how neurons in Pythia and OLMo shift from token-level to semantic features across depth and training.
- Showed that early layers separate common and rare synonyms while later layers converge on shared meaning, using neuron-embedding clustering, Jensen-Shannon divergence, and polytope geometry.

Kinetic Vision, Machine Learning Intern, Cincinnati, OH

May 2025 - Aug 2025

- Developed volumetric autoencoder and DETR models in PyTorch for surgical-tool centerline detection, and generated synthetic 3D training data that reduced manual annotation by 75%.
- Automated data pipelines and provisioned Google Cloud infrastructure with Terraform.

Phillips Edison & Company, Software Engineering Intern, Cincinnati, OH

Jan 2024 - Dec 2024

- Led a three-person offshore team to build machine learning ETL pipelines for real-estate documents, reducing extraction time by 80% and routing structured results into business applications and the data warehouse.

SELECTED PROJECTS AND OPEN-SOURCE SOFTWARE

Sonde, linear probing toolkit for mechanistic interpretability (github.com/aniruddh-alt/sondekit)

2026 - Present

- Building a YAML-driven toolkit to extract transformer activations, train linear probes with group-aware stratified splits, run layer sweeps, and apply directional ablation and steering, covered by about 250 tests in CI.

GlassBox, white-box observability for self-hosted open LLMs (github.com/aniruddh-alt/glassbox)

2026 - Present

- Building continuous monitoring of model internals with linear probes and sparse autoencoder features to detect misalignment during inference time that capability evaluations miss.
- Built a monitoring dashboard with alerting, a local redaction layer for private data, an AUROC-gated probe pipeline, and a GPU inference microservice.

TECHNICAL SKILLS

Programming: Python, JavaScript/TypeScript, Java, Go, Rust, C++, C, SQL

Machine Learning: PyTorch, Hugging Face Transformers, vLLM, verl, NNSight, TransformerLens, supervised fine-tuning, LoRA, reinforcement learning (GRPO, RLHF), linear probes, activation patching, steering vectors, sparse autoencoders

Web and Cloud: Flask, Django, React, Next.js, Node.js, REST APIs, AWS, Google Cloud Platform, Terraform, Modal, SkyPilot, Docker, CI/CD

Data and Tools: PostgreSQL, MySQL, MongoDB, SQLite, ConvexDB, Neo4j, Git, PyTest, Unix/Linux

Languages: English (professional), Tamil (native), Hindi (basic), Arabic (elementary)

LEADERSHIP AND PROFESSIONAL SERVICE

IEEE-HKN Tau Chapter, University of Cincinnati, President

Apr 2026 - Present

- Lead UC's chapter of the IEEE electrical and computer engineering honor society after serving as Vice President, running the Fall 2026 induction that invited 251 eligible students.

Interp4Discovery Workshop at NeurIPS 2026, Reviewer

2026

- Reviewed three submissions on sparse autoencoder features in vision models, SAE hierarchy recovery, and validating learned physics in neural PDE solvers.

NeuralArtifacts Workshop at NeurIPS 2026, Reviewer

2026

- Reviewed three submissions on artifacts in model internals, including how activation quantization distorts residual-stream behavior beyond what perplexity shows.

Mechanistic Interpretability Workshop at ICML 2026, Reviewer

May 2026 - Jun 2026

- Reviewed six submissions on probing methodology, causal circuits, geometric attribution, grokking, out-of-distribution detection, and activation steering for soundness, reproducibility, and calibration of claims.

Bearcat Ventures, Managing Partner, Cincinnati, OH

Aug 2024 - Apr 2026

- Managed strategy and operations for the University of Cincinnati's student-run \$1 million evergreen venture fund, directing sourcing through founder outreach, the UC Venture Lab, and regional startup competitions.
- Sourced more than six qualified companies in two weeks as an analyst, earning promotion to Director of Deal Flow.
- Co-led the 2026 Venture Capital Investment Competition team and built its training curriculum and term-sheet review.

PhizzIO, Co-Founder, Cincinnati, OH

2023 - 2024

- Co-founded a computer-vision platform that guides physical therapy patients through home exercises and tracks their adherence, winning more than \$28,000 in startup prize funding.

AWARDS AND HONORS

Academic and Research

- **Outstanding Reviewer**, Mechanistic Interpretability Workshop at ICML 2026 (2026). Recognized by the workshop organizers for the quality of completed peer reviews.
- **Best Undergraduate Student Award**, Department of Computer Science, University of Cincinnati (2025). Department-level recognition for undergraduate achievement in computer science.
- **Excellence in Research Communication Award**, University of Cincinnati (2023 & 2024). Received for a poster presentation in 2023 and a podium presentation in 2024.
- **Mantei / Mae Scholarship for Academic Achievement and Excellence**, University of Cincinnati (2024 & 2026). Competitive departmental scholarship awarded to the top 1% of the class.
- **International Outreach Scholar**, **University Honors Scholar**, and **UC Global Scholarship**, University of Cincinnati (2022 - 2026). Academic scholarships and honors standing maintained since admission.
- **Dean's List**, University of Cincinnati (2022 - 2026).

Competitions

- **Most Technically Impressive Project** and **Best Use of AWS**, RevolutionUC (2025). Won two category awards at the University of Cincinnati's annual student hackathon.
- **Second Place Overall**, RevolutionUC (2024). Placed second with PhizzIO, a co-founded physiotherapy startup.
- **Winner**, Launch It: Cincy (2024). \$28,000+ prize package for PhizzIO, featured in the Cincinnati Business Courier.
- **First Place Overall**, MakeUC (2023). Won the University of Cincinnati's fall hackathon.
- **First Runner-Up**, UC Startup Weekend (2023), and **First Place**, IQE First Year Pitch Competition (2023). Venture pitch competition placements for PhizzIO.