

Shreya Nakum

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Education

University of California, Irvine

Expected March 2027

Bachelor of Science in Computer Science with Honors (GPA: 3.82 / 4.00)

Irvine, CA

- **Relevant Coursework:** Programming in C/C++, Data Structures & Algorithms, Discrete Math, Operating Systems, Introduction to Artificial Intelligence.
- **Honors/Awards:** 1st Place Best Collaborative Research at UCI UROP 2025, Chancellor's Award for Excellence in Undergraduate Research, HackMIT Modal Prize Honorable Mention, 6x Dean's Honors List.
- **Involvements:** Information and Computer Science Honors Program, Campus Honors Collegium, Artificial Intelligence@UCI

Technical Skills

Languages: Python, C++, C, R, Javascript/Typescript, Java, SQL, MIPS (Assembly)

Frameworks & Libraries: PyTorch, TensorFlow/Keras, Flask, FastAPI, BeautifulSoup, scikit-learn, UMAP, transformers

Tools & Platforms: AWS (Lambda, Boto3), Firebase, Docker, PostgreSQL, Milvus, HuggingFace, Git, WordPress

Expertise: Machine Learning (Supervised Unsupervised), Deep Learning, CNNs, RAG, Prompt Engineering, Data Analysis, Statistical Modeling

Other: Web Development, API Integration, Web Scraping, MLOps, Supercomputing

Experience

National Science Foundation: University of Oulu - M3S Lab

June 2025 – Aug 2025

Researcher

Oulu, North Ostrobothnia, Finland

- Built a RAG pipeline to measure code clone similarity in software repositories.
- **Benchmarked 3 LLMs** across zero-shot, few-shot, and chain-of-through prompts with 3k+ thresholding values.
- Automated statistical evaluation of model metrics; co-authoring a research paper.

UC Irvine - Rose Labs (School of Biological Sciences)

Sep 2024 – Present

Researcher

Irvine, CA

- Trained 220 supervised ML models to identify evolving DNA sequences, achieving **80% accuracy**
- Designed a CNN object detection pipeline (95% accuracy) for small-scale biological imaging
- Deployed a Flask+JS classification system that **accelerated model inference by 10x**
- Awarded 2 research prizes for novel small-object detection methods; currently drafting publication
- Built the lab's **WordPress website** for publications, awards, and project showcases

dabbl

June 2024 – Aug 2024

Software Engineer Intern

Los Gatos, CA

- Scraped Common Data Set reports across 6k+ colleges using **BeautifulSoup, requests, and pdfplumber**.
- Integrated CollegeScorecard API to aggregate SAT/ACT and demographic data.
- Shipped an in-app **Firebase** notification system for 500+ active users.

Atoma Media

Nov 2023 – Nov 2024

Large Language Model Specialist

Irvine, CA

- Released a HuggingFace sentiment analysis model (**80% accuracy, 6k+ downloads**)
- Connected HuggingFace API to production frontend via TypeScript.
- Built and automated Twitter scraper with PostgreSQL + AWS Lambda.

California Institute of Technology

Oct 2021 – Mar 2023

Researcher

Pasadena, CA

- Processed Hubble COS-Halos datasets with Python (**astropy, numpy, pandas**)
- Derived galaxy halo mass and velocity profiles; visualized results with **matplotlib**
- Published findings in *MNRAS* and presented it at the American Astronomical Society conference

Projects

HackMIT: ActsAI | Honorable Mention, Modal.AI

Github

- Built an AI-powered mental health platform connecting users to therapists.
- Deployed a LLAMA-based chatbot with Modal; integrated SMS alerts for crisis detection.
- Scraped Boston-area therapist data to personalize recommendations.

Publications

Butsky, I., Nakum, S., Ponnada, S., Hummels, C., Ji, S., & Hopkins, P. (2022). Constraining Cosmic-ray Transport with Observations of the Circumgalactic Medium. *Monthly Notices of the Royal Astronomical Society*, **521**(2), 2477–2483. <https://doi.org/10.1093/mnras/stad671>

Nakum, S., Kemman, J., Esposito, M., Cerny, T., Lenarduzzi, V., & Taibi, D. (2025). Leveraging LLMs for Code Clone Similarity Classification in Open Source Microservice Repositories. *Automated Software Engineering*, [In-Review]