Rohun Agrawal

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Education

California Institute of Technology 2021 – 2025
B.S. Applied and Computational Mathematics
Minor: Computer Science
GPA: 4.1/4.3

Research Experience

Caltech, Georgia Gkioxari Lab January 2024 – Present
Advised by Prof. Georgia Gkioxari

- Formulated and implemented an agentic workflow that produces a dynamic domain-specific language for visual program synthesis, improving 3D spatial reasoning, and outperforming large vision-language models.
- The project won Meta's LLM Evaluation Research Grant for ongoing work, and is in submission at CVPR 2025.

NASA Jet Propulsion Lab, ML Group June 2023 – September 2023
Machine Learning Research Intern

- Researched calibration of a Gaussian Process Regression model for Martian frost likelihood.
- Reduced calibration error by over 6x for more reliable uncertainty estimates, improving confidence in 63% of scientific regions of interest.

MIT, William Freeman Lab January 2023 – June 2023
Advised by Mark Hamilton

- Developed and evaluated a novel feature distillation algorithm for features from Meta's DINO model aimed at improving unsupervised semantic image segmentation.

Caltech, Katie Bouman Lab January 2022 – June 2023
Advised by Prof. Oscar Leong

- Developed an alternating minimization algorithm that samples from a denoiser via Langevin Dynamics to solve imaging phase retrieval problems.
- First-author publication in ICASSP 2023.

Work Experience

Apple, Media Analysis Team June 2024 – September 2024
Machine Learning Intern

- Implemented and trained deep models from scratch for a video-related task with a focus on improving inference speed for similar output quality.
- Selected as 1 out of 10 interns to present to Craig Federighi, Senior VP and head of the Software Engineering Org.

Publications

Visual Agentic AI for Spatial Reasoning with a Dynamic API
D. Marsilli, R. Agrawal, Y. Yue, G. Gkioxari.
Submitted to Conference on Computer Vision and Pattern Recognition (CVPR) 2025.

Holistic Mapping of the Present-day Martian Seasonal CO2 Frost: Part 1
S. Diniega, G. Doran, S. Lu, M. Wronkiewicz, J. Widmer, R. Agrawal, U. Rebbapragada.
Submitted to Planetary Science Journal.

Alternating Phase Langevin Sampling with Implicit Denoiser Priors for Phase Retrieval
R. Agrawal, O. Leong.
International Conference on Acoustics, Speech, and Signal Processing (ICASSP) 2023.

Honors and Awards

Meta LLM Evaluation Research Grant (for project with Prof. Gkioxari)	2024
Apple Intern Presentation Finalist	2024
Caltech Athlete of the Year	2024
NCAA All-Academic Honors - Track & Field	2024
Housner Student Discovery Fund Recipient	2023
Skjellum Research Fellowship	2022

Teaching

EE 150: Introduction to Deep Learning (TA)	Winter 2025
ACM 116: Introduction to Probability Models (TA)	Fall 2024
CS 12: Machine Learning in Tensorflow (Instructor)	Spring 2024
ACM 104: Applied Linear Algebra (TA)	Fall 2023
CS 12: Machine Learning in Tensorflow (TA)	Spring 2023

Activities

Caltech Data Science Organization, President	2021 - Present
NCAA Cross Country and Track, Captain	2021 - Present