

## Amit Rand

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| CONTACT INFORMATION      | Los Angeles, CA<br>Department of Mathematics<br>amit.rand@ucla.edu                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | (857) 998-9070<br>University of California, Los Angeles<br>amitrاند.com |
| RESEARCH INTERESTS       | Diffusion models, imitation learning, and reinforcement learning; deep learning for biomedical imaging (MRI and X-ray); policy optimization and decision-making for robotics.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                         |
| EDUCATION                | <b>University of California-Los Angeles</b> , Los Angeles, California<br><i>Department of Mathematics</i> GPA: 3.7<br>B.S., Mathematics & Computer Science, Expected June 2026<br><i>Relevant Coursework: Linear Algebra, Statistics &amp; Probability, Machine Learning, Computer Vision, Reinforcement Learning*, Deep Learning*, Generative AI*. (Graduate Coursework*)</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                         |
| RESEARCH EXPERIENCE      | <b>University of California-Los Angeles</b> , Los Angeles, California Sept. 2025 – Present<br><i>Research Assistant to Dr. Yuchen Cui</i> Robot Intelligence Lab<br>Researching zero-shot imitation learning retrieval using CoTracker-based motion representations and human-guided sketch queries to enable policy learning in the absence of direct demonstrations.<br><br><b>David Geffen School of Medicine, UCLA</b> , Los Angeles, California July 2024 – Present<br><i>Research Assistant to Dr. Kim-Lien Nguyen</i> Cardiovascular Imaging Research Lab<br>Investigating score-weighted diffusion models across 3D (2D+Time) and 5D (3D with respiratory and cardiac motion) domains to enable accelerated, free-breathing MRI acquisition.<br><br><b>Stanford University</b> , Palo Alto, California Jan. – June 2024<br><i>Research Apprenticeship to Dr. Tushar Mungle</i> Department of Biomedical-Data Science<br>Conducted literature review on biomedical imaging and developed a TensorFlow-based CNN trained on corneal images, achieving over 95% accuracy in diagnosing infectious keratitis. |                                                                         |
| HONORS AND AWARDS        | UCLA: Undergraduate Research Scholar Program Fellowship, 2025<br>James & Meredith Henry Scholarship, 2025<br>Honors Scholar Recipient, 2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                         |
| ACADEMIC EXPERIENCE      | <i>Teaching Assistant</i> Mar. – June 2025<br>Introduction to Algorithms and Complexity (CS 180; Upper-division). Duties at various times have included office hours and leading weekly computer lab exercises.<br><br><i>Teaching Assistant</i> Mar. – June 2023<br>Introduction to Data Science (CS T17; Lower-division). Duties at various times have included office hours and leading weekly computer lab exercises.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                         |
| PUBLICATIONS             | [Submitted] <b>Rand, Amit</b> , Cui, Y. 2025.<br><br>[Submitted] Coudert, T. <b>Rand, Amit</b> , Nguyen, K-L. 2025.<br><br>[Submitted] <b>Rand, Amit</b> , Ibrahim, H. 2025 Beyond Conventional Transformers: The Medical X-ray Attention (MXA) Block for Improved Multi-Label Diagnosis Using Knowledge Distillation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                         |
| CONFERENCE PRESENTATIONS | [Poster] <b>Rand, Amit</b> , Ibrahim, H. 2025. Beyond Conventional Transformers: A Medical X-ray Attention Block for Improved Multi-Label Diagnosis. NeurIPS 2025 Workshop for Imageomics: Discovering Biological Knowledge from Images Using AI. San Diego, California, USA.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                         |

PROFESSIONAL  
EXPERIENCE

**Amazon Project Kuiper**, Redmond, Washington  
*Software-ML Development Engineer Intern, Radio Payload Team* June – Sept. 2025  
 Investigated and modeled thermal-dependent calibration dynamics for satellite transmission panels, developing and validating transformer-based ML systems that cut satellite panel calibration time by 99% (3 hrs → 1 min) and enabled near real-time in-orbit adjustment.

**Leidos**, Los Angeles, California  
*Research Scientist Intern to Graph AI Group, AI/ML Research Accelerator* Apr. – June 2025  
 Implemented advanced embedding strategies for Graph Neural Networks to model dynamic graph structures, enhancing clustering performance and improving reinforcement learning decision accuracy by 15% on benchmark tasks.

**Scale AI**, Los Angeles, California  
*Technical Advisor Intern, Generative AI* June – Sept. 2025  
 Optimized proprietary LLM architectures for complex reasoning in mathematics and CS, boosting multi-step task accuracy.

**Q.ai (Backed by Google Ventures, Kleiner Perkins)**, Cupertino, California  
*Software Development Engineer Intern* Aug. – Oct. 2024  
 Shipped high-impact features for a proprietary data collection platform, reducing operator task time by 25% and deploying deep learning models with 20%+ accuracy gains, while building real-time dashboards to monitor 10M+ files across global sites.

**Empowerly**, Cupertino, California  
*Software Development Engineer Intern* May 2024 – Feb. 2024  
 Engineered full-stack platforms and autonomous communication agents with LLM-driven data aggregation and adaptive filtering pipelines, conducting iterative R&D to optimize large-scale dataset processing and boost user engagement by 13%.

ACADEMIC SERVICE Reviewer, NeurIPS 2025 Imageomics Workshop Sept. – Oct. 2025

SERVICES AND  
ACTIVITIES Undergraduate Advisory Board Member, Department of Physical Sciences, UCLA 2025-Present  
 Founder-in-Residence, Venture Entrepreneurship Club (VEST), UCLA 2024-Present  
 Member, Chabad and Hillel, UCLA 2024-Present  
 Computer Engineer for Formula Electric Racing, Santa Clara University 2023-2024  
 President, Developer’s Guild, Foothill-De Anza College 2023-2024  
 Director, DeAnzaHacks2.0, Foothill-De Anza College 2023

PROJECTS **Sketch2IL** Sept. 2025 – Present  
*UCLA Robot Intelligence Lab*  
 Built a sketch-to-motion embedding pipeline that translates human sketches into motion representations, enabling behavior learning without direct demonstrations. Implemented scalable retrieval over large demonstration datasets and used pseudo-demonstrations to train policies with behavior cloning and contrastive learning.

**fMBV-Microvascular Network Pipeline GUI** July 2024 – June 2025  
*Cardiovascular Imaging Research Lab*  
 Engineered a multi-language (C++/Python/MATLAB) platform integrating advanced imaging toolkits to automate arterial segmentation and 3D visualization, reducing preprocessing time by over 80% and enabling scalable synthetic vascular modeling and radiomic analysis for cardiovascular studies.

**MedKnight** Oct. 2024  
*CalHacks 11.0 Hackathon Winner* Project & Code Here

Developed an intelligent AI medical assistant (in 36 hours) powered by GPT and DALL-E through agentic framework, integrating computer vision, real-time audio processing, and a Flask-based back-end with RESTful APIs to deliver hands-free AR (MetaQuest) support for first responders.

*View a broader selection of my work in my [portfolio](#)*

- TECHNICAL SKILLS
- Languages: Python, C/C++, Java, JavaScript, TypeScript, SQL, Bash, HTML, CSS.
  - Packages: PyTorch, NumPy, Pandas, Jupyter, OpenCV, SB3, Gym, Matplotlib, Seaborn, Weights & Biases, TensorBoard, Next.js, React.js, TailwindCSS, PostgreSQL, Vercel, VTK/ITK/VMTK, PyQt, SageMaker & AWS.
  - Operating Systems: macOS, Unix/Linux.

- REFERENCES
- |                                                                                  |                                                                         |
|----------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <b>Dr. Thomas Coudert, PhD</b><br><i>Post-doctoral Research Fellow</i>           | Cardiovascular Imaging Research Lab<br><i>tcoudert@mednet.ucla.edu</i>  |
| <b>Dr. Yuchen Cui, PhD</b><br><i>Principal Investigator, Assistant Professor</i> | Robot Intelligence Lab<br><i>yuchencui@cs.ucla.edu</i>                  |
| <b>Ping Wu</b><br><i>Software Development Manager</i>                            | Amazon Project Kuiper<br><i>wuping@amazon.com</i>                       |
| <b>Dr. Mohamad Katanbaf, PhD</b><br><i>Senior Embedded Software Engineer</i>     | Amazon Project Kuiper<br><i>mtkatanbaf@gmail.com</i>                    |
| <b>Dr. Mostafa Mahmoudi, PhD</b><br><i>Project Scientist</i>                     | Cardiovascular Imaging Research Lab<br><i>mmahmoudi@mednet.ucla.edu</i> |