

Subash Katel

CONTACT INFORMATION	skatel@princeton.edu subashkatel.com	
EDUCATION	Princeton University, Princeton, NJ Ph.D. in Computer Sciences	Aug 2025 - Jun 2029
	University of California San Diego, La Jolla, CA B.S. in Computer Science	March 2025
RESEARCH EXPERIENCE	Harvard Edge Lab, Harvard University Research Assistant, Prof. Vijay Janapa Reddi	May 2024 - present
	Exploring the application of Generative AI and large language models (LLMs) for hardware design automation across various languages.	
	ACT Lab, UC San Diego Research Assistant, Prof. Hadi Esmaeilzadeh	April 2024 - present
	Developed key compiler tools, including custom visualization for intermediate representations (IR) and a converter transforming PyTorch models to the custom Fhy language, enhancing debugging and enabling integration between high-level ML models and hardware-specific languages.	
	Kastner Research Group, UC San Diego Research Assistant, Prof. Ryan Kastner	Jan 2024 - present
PUBLICATIONS, PRESENTATION	Evaluating the viability of repurposed smartphones (Google Pixel Fold) for hosting containerized EdTech applications, analyzing performance for Jupyter notebooks and PrairieLearn, with the goal of creating sustainable, low-carbon educational computing environments.	
	Duarte Lab, UC San Diego Research Assistant, Prof. Javier Duarte	Jan 2024 - present
	Applying self-supervised learning for analyzing jets in high-energy physics. Developed Jet-based Joint Embedding Predictive Architecture (J-JEPA) to learn augmentation-independent representations of jets.	
PROJECTS	Muscle Physiology Lab, UC San Diego Research Assistant, Prof. David Berry	Dec 2023 - Sept 2024
	Implemented and trained UNet architecture for automated spine muscle segmentation in MRI data, improving analysis efficiency for Naval Health Research Center's (NHRC) Warfighter Performance study.	
PUBLICATIONS, PRESENTATION	Katel, S.*, Li, H.*, Zhao, Z.*, Duarte, J. (2024). Learning Symmetry-Independent Jet Representations via Jet-Based Joint Embedding Predictive Architecture. Presented at <i>ML4Jets Workshop</i> , Paris, France and <i>NeurIPS Workshop on Machine Learning for Physical Sciences</i> , Vancouver, Canada.	
	Switzer, J., Katel, S., Lee, J. C., Rajacn, A. R. A., Kastner, R., & Pannuto, P. (2024). Reducing the Carbon Footprint of EdTech with Repurposed Devices. Presented at <i>MICRO, The 15th International Green and Sustainable Computing Conference (IGSC) Workshop and at joint Google/UCSD summit</i> .	
PROJECTS	Cuda to OpenCL Conversion	
	Open-sourced and migrated UCSD's Parallel Programming curriculum from NVIDIA CUDA to	

OpenCL.

UAV Search & Report

Developed a proof-of-concept UAV system for autonomous surveying and object detection in Search and Rescue (SAR) missions, using off-the-shelf components and existing software frameworks.

WORKING EXPERIENCE

San Diego Supercomputer Center, San Diego, CA

Software Engineering Intern

June 2021 - September 2021

Worked on various software development projects, focusing on mobile applications, implemented iOS applications using React.js and JavaScript, collaborating closely with the design team to ensure a seamless user experience based on client feedback.

AWARDS

Excellence in Research Award, UC San Diego

2025

Offered Sloan Foundation Scholarship & UCEM Fellowship (Duke; declined)

2025

NSF Empower Scholarship, UC San Diego

2023 - 2025

Empower Research Scholarship, UC San Diego

2024

UCSD Travel Grant - ML4Jets Conference

2024

CSE Travel Grant - ASPLOS Conference

2024

NSF REU Pannuto Summer Scholarship, UC San Diego

2024

Jacobs School Student Travel Fund - NeurIPS, UC San Diego

2024

Richard L. and Fern W. Erion & Laidlaw-Erion Scholarship, UC San Diego

2023

TEACHING EXPERIENCE

Teaching Assistant, UCSD, CA

CSE 160 Parallel Programming

Jan 2025 - March 2025

Saddleback LRC, Saddleback College, Mission Viejo, CA

Volunteer CS Tutor

Supported students through personalized tutoring on programming concepts and the temporal organization of their coursework related to the Computer Science program.

OUTREACH

SASE Student Chapter, Saddleback College, Mission Viejo, CA

Co-Founded and Led an organization that promotes and supports diversity to underrepresented minorities on campus through professional development workshops in a broad spectrum of Computer Science & engineering disciplines.

ACM Student Chapter, Saddleback College, Mission Viejo, CA

Connected the chapter to external organizations for pro-bono software development services and acted as a liaison for guest speakers and local business opportunities.

Society of American Military Engineers, Saddleback College, Mission Viejo, CA

Developed the community-based mentorship program in the chapter that matches transfer-ready students with first-year students to promote STEM awareness and success.

SKILLS

- Programming Languages: Python, C++, CUDA, OpenCL
- Hardware Description Languages: Verilog
- Tools & Frameworks: Pytorch, Docker, Kubernetes,