

# Yamini Karthik

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## EDUCATION

### San Jose State University

B.S. in Computer Science

San Jose, California

Expected Graduation, May 2028

- o GPA: 3.86/4.00, [President's Scholar](#), Dean's Scholar
- o **Related Coursework:** Data Structures & Algorithms, Operating Systems, Object-Oriented Programming, Discrete Mathematics

## EXPERIENCE

### Break Through Tech

AI/ML Fellow

May 2025 – Present

- Selected from 3,500+ applicants for a competitive AI fellowship with ML coursework, industry mentorship, and applied projects [[Machine Learning Foundations Course](#)]
- Participant in 12-month long program including Machine Learning coursework with Cornell faculty, experiential learning experiences, and mentorship from industry professionals

### Break Through Tech | AI Studio - Latitude AI

Team Member

Aug 2025 – Dec 2025

- Worked with a team of 6 to develop an end-to-end instance segmentation pipeline for autonomous driving using Mask R-CNN on BDD100K and Cityscapes, benchmarking against foundation models like SAM for generalization and label quality

### Cadence Design Systems

Software Engineering Sprinter

San Jose, California

Jul 2025 – Aug 2025

- Collaborated with a team of 4 to design and implement an HTML-to-PDF conversion workflow in Python, improving efficiency and scalability of technical document generation
- Optimized workflow to reduce production time by 80%, integrating automated PDF creation, table of contents, bookmarks, and internal link preservation; presented results to Cadence employees

## PROJECTS

### [Instance Segmentation for Autonomous Driving](#)

Team Member

Aug 2025 – Dec 2025

- Built and evaluated a production-ready instance segmentation pipeline using Mask R-CNN, trained on 100K+ images from BDD100K and Cityscapes, achieving strong generalization across diverse driving conditions
- Led model evaluation and performance analysis, visualizing segmentation quality and accuracy trade-offs, and compared Mask R-CNN against foundation model approaches (SAM+ text-conditioned detectors) to identify strengths, limitations, and deployment considerations for autonomous driving systems

### HTML-to-PDF Script

Team Member

San Jose, California

Jul 2025 – Aug 2025

- Designed a scalable document generation pipeline in Python, enabling automated PDF creation from HTML files with cover page, table of contents, bookmarks, and preserved internal links
- Conducted performance testing and debugging to address memory limitations and navigation issues, resulting in a solution that streamlined technical publication workflows

## ACTIVITIES AND LEADERSHIP

### Responsible Computing Club

Mozilla Workshop Ambassador/Mozilla Industry Ambassador

San Jose, California

Sep 2024 – Dec 2024/Jul 2025-Present

- Organized a professional speaker panel by engaging industry experts, and collaborated with leadership to design 10+ technical workshops on topics including AI ethics and facial recognition

## SKILLS

**Programming:** Java, Python, JavaScript, HTML/CSS

**Tools:** IntelliJ, Eclipse, Jupyter Notebooks, Git, Microsoft Office Suite, Google Workspace, Bootstrap, Canva, Matplotlib