

# AKASH BALAKRISHNAN

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## EDUCATION

**University of Southern California** June 2027  
**Masters of Science in Computer Science | Artificial Intelligence**

**University of California, Santa Cruz** August 2024  
**Bachelor of Science in Computer Engineering | Honors**

## SKILLS

Languages: Python, C++, JavaScript

Frameworks/Libraries: PyTorch, OpenCV, NumPy, React, Flask

Domains: Computer Vision, Deep Learning Robotics, Embedded Systems

## EXPERIENCE

**Computer Vision Intern, Ariel Robotics** November 2025-Present  
Solakair, Fremont, CA

- Devise real-time drone-based object detection system for sub-15ms latency for tracking dynamic objects
- Integrate NVIDIA Jetson Nano GPU for 30x inference speedup over CPU baseline
- Optimized model inference pipeline using CUDA and TensorRT, reducing latency from X ms to <15 ms for real-time edge deployment

**Graduate Researcher Assistant, Modular Robotics** September 2025-Present  
USC-ISI, Los Angeles, CA

- Implement independent module connection and self-balancing algorithms for modular robots, improving system stability during dynamic reconfiguration

**Software Engineering Intern, X-Ray** January 2024-July 2024  
Oxford Instruments, Scotts Valley, CA

- Researched and developed an artifact detection algorithm for Beryllium disks be able to meet buyer specification with a margin of error of 1%
- Improved inspection accuracy and reduced manual review time by 80%, increasing production efficiency
- Led a team of 4 interns via Agile/Scrum practices to deliver production-ready solutions on schedule

**Undergraduate Research Assistant, Baskin School of Engineering** January 2024-March 2024  
UC Santa Cruz - SSN Word Identification, Santa Cruz, CA

- Evaluated Spiking Neural Networks (SNNs) across three datasets (images, audio, handwritten digits), and discovered a 40% accuracy improvement by converting static inputs into time-varying representations

## PROJECTS

**LED Morse Code Translator (C++, Python)** May 2024

- Built a Morse code communication system using Raspberry Pi 4 and ESP32, transmitting up to 2 chars/sec via LED and photodiode pair, with over 99% decoding accuracy and 95% accuracy at 5 chars/sec
- Programmed Python and C++ scripts to encode and decode messages, optimizing GPIO timing to achieve a 2x speed increase over baseline transmission with only a 4% loss in data

**AnimeAI Web Application (Js, Python, HTML)** June 2023-July 2023

- Designed and constructed a Full Stack Web Application with a Frontend of React and a Backend of Flask and Node.js server for seamless backend functionality and built APIs to integrate with system
- Implemented KNN to recommend anime titles based on user-selected genre preferences
- Conducted efficient queries using an SQLite database populated through web scraping

## CERTIFICATIONS

AWS Certified Cloud Practitioner

Advanced Learning Algorithms: DeepLearning.AI, Stanford University

Supervised Machine Learning: DeepLearning.AI, Stanford University