Ambarish G Kaliamurthi

San Jose, CA 📞 +1 408-590-1407 ✉ ambarishgk@gmail.com

🌐 ambarishgk.com in ambarishgk ⓞ AmbarishGK ▶ ambarishgk

Education

San Jose State University   **May 2026**

Master of Science in Computer Engineering   *San Jose, CA*
- Data Structures
- Machine Learning
- Adv Computer Design
- Software Sys Design
- Internet of Things
- NLP
- Computer Architecture
- AI and Data Engg

Experience

San Jose State University Research Foundation   **Sep 2024 – Present**

Graduate Research Assistant - ▶ *ambarishgk*   *San Jose, CA*
- Developing a vLLM-powered exploration framework for LiDAR + stereo-based AGVs, enabling richer scene understanding, object exploration, and improved autonomous navigation.
- Prototyping an LLM-powered voice teleoperation system using ROS2, integrating Google Speech-to-Text to enable natural language AGV navigation and task commands.
- Designed and deployed a multi-modal sensor fusion pipeline on NVIDIA Orin, integrating LiDAR and stereo cameras for real-time 3D mapping and robust perception in dynamic environments.
- Built a LiDAR-based point pillar object detection pipeline using MMDetection3D with KITTI 360 and Waymo datasets, enhancing detection accuracy and speed.

Smarthub.ai   **May 2021 – Jan 2024**

Software Engineer   *Bengaluru, India*
- Engineered an asynchronous Python IoT Docker monitoring system with 99% accuracy, reducing false downtime alerts by 87%.
- Developed a Python Cloud SDK and Golang CLI for efficient product deployment and cloud integration.
- Optimized firmware upgrades using AsyncIO and multithreading, cutting upgrade time from 5 hours to 7 minutes (90% improvement).
- Built monitoring/evaluation pipelines supporting 4000+ devices, ensuring scalable system reliability and enabling 35% revenue growth.
- Created an OpenCV Python script for DataMatrix barcode scanning, enabling fast, reliable CV-based data capture.

Predigle India Pvt Ltd   **Sep 2020 – Apr 2021**

Software Developer   *Chennai, India*
- Developed a full-stack web app with Python (Flask), Angular, and MySQL to rank 10M+ leads with secure role-based authentication for a health tech domain.
- Implemented secure, role-based authentication with tokenization and hashing for a multi-tenant system supporting 10M+ records, applying scalable database and algorithmic design.
- Built a real-time cluster monitoring dashboard to track key metrics, supporting data-driven decision-making.

Projects

LeRobot Hackathon – Robotic Oximeter Placement | *Imitation Learning, ACT, VLMs*
- Developed an imitation learning policy for a robotic arm to autonomously place an oximeter on a human figure.
- Leveraged ACT (Action Chunking with Transformers) and Vision-Language Models for policy training.

Aether: AI-Powered Meeting Summarization | *Python, LLMs*   **Nov 2024**
- Built an NLP app with GPT models to auto-summarize meetings, extract code, and generate action items.

IoT Trojan Image Scanner | *Python, CV, Security*
- Developed a Python-based CV tool to detect Trojan-embedded images in IoT devices via anomaly and file integrity analysis. Built a CLI for seamless deployment with LLM based summarization of results.

ROS2 Wrapper for DualSense Haptic PS5 Joystick | *ROS2, C++, Robotics*   **Dec 2024 – Present**
- Integrated PS5 DualSense joystick control (motion, touchpad, haptic feedback) into ROS2 robotic systems.
- Implemented haptic feedback functionality for enhanced robotic control.

Parking Space Detection with YOLOv8 | *Python, TensorFlow* **Dec 2024**
  – Developed real-time parking detection achieving 95% accuracy on PKLot dataset.

Reddit Async Bot | *Python, AsyncPRAW, NLTK* **Mar 2023**
  – Built an async bot analyzing 80K Reddit comments/hour with sentiment analysis and visualization.

Technical Skills

Programming & Frameworks: Python, C, C++, Go, Typescript, SQL
Deep Learning & AI: YOLO, vLLM, VLM, Natural Language Processing, Computer Vision, PyTorch
Libraries & Tools: Linux, Docker, Kubernetes, Git, AWS, GCP, LlamaIndex, LangChain, Google Speech-to-Text, Whisper, Hugging Face Transformers

Certifications

Introduction to Model Context Protocols (Anthropic)

Introduction to Large Language Models (LinkedIn)

An Even Easier Introduction to CUDA (NVIDIA)

Microsoft Certified: Azure AI Fundamentals

Scientific Data Processing (Google cloud)

Leadership / Extracurricular

Open Source Robotics Alliance (OSRA) **Apr 2025**
Individual Support Member

Institute of Electrical and Electronics Engineers (IEEE) **Jun 2024**
Student Member

International Student and Scholar Services (ISSS-SJSU) **May 2024**
Global Leader