

# Suhas Kunte Manjunath Rao

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San Francisco Bay Area, CA

## EDUCATION

### University at Buffalo

Buffalo, NY

Master of Science in Computer Science and Engineering | GPA: 3.67/4

Aug. 2025 – May 2027

**Relevant Coursework:** Machine Learning, Deep Learning, Data Models & Query Languages, Algorithms, Computer Security, Data Intensive Computing, Seminar on AI for Health

### New Horizon College of Engineering

Bengaluru, India

Bachelor of Engineering in Information Science and Engineering | CGPA: 9.36/10

June. 2019 – June 2023

## EXPERIENCE

### Research Aide

February 2026 – Present

Embedded Sensing and Computing (ESC) Lab, University at Buffalo

Buffalo, NY

- Designing and developing the **BIRA** (Buffalo Innovation & Research Academy) summer camp website for UB's ESC Lab using **React.js** and **Tailwind CSS**.
- Building a **multi-page responsive web application** with dedicated sub-sites for individual programs, including camp details and session information.

### Research Assistant | Volunteer

September 2025 – January 2026

University at Buffalo

Buffalo, NY

- Evaluated security compliance of **LLM-generated code (LLaMA 3.1 and GPT)** against **12 CWEs** across **350+ code samples** through manual code review, benchmarking each model's adherence to **Secure Coding Practices (SCP)**.
- Compared **CWE violation patterns** between LLaMA 3.1 and GPT models to identify recurring security weaknesses in LLM-generated code, contributing findings to internal **AI security benchmarking** research.

### Associate Engineer

March 2024 – July 2025

Brillio, CTO Team – Generative AI & Cloud Modernization

Bengaluru, India

- Developed a **multi-agent RAG pipeline** to automate legacy TIBCO BusinessWorks to .NET microservice conversion, achieving **70% code conversion accuracy** and reducing manual rewriting effort by **60%**.
- Built a **Summary Agent** to generate file-level descriptions and stored target architecture as **embeddings in OpenSearch**, enabling a **Classification Agent** to classify files per subdomain and generate **dynamic prompts** for batch microservice conversion – successfully converting 3 subdomains and 5 microservices.
- Built a **Text-to-SQL chatbot** over a ServiceNow incident dataset (**100K+ records**) using **LangChain** and **Claude via AWS Bedrock**, converting natural language queries into SQL and returning human-readable responses – eliminating manual SQL querying for the incident management team.

## PROJECTS

### Food Intake Detection | PyTorch, YOLO, OpenCV

- Finetuned pretrained **R3D-18 Video ResNet** on EatSense dataset (135 videos, 709K labeled frames) by freezing encoder layers and training only the classifier head, achieving **73.1% validation accuracy** for eating gesture detection.
- Integrated YOLO as a preprocessor to crop child region from two-person meal videos before R3D-18 inference, improving mean eating detection confidence **6x (0.073 → 0.467)**.

### KnowHive | React.js, Flask, GPT-2, MySQL, Git

- Built a knowledge platform with **React.js** and **Flask**, integrating a **GPT-2** model via REST APIs for solution recommendations and **MySQL** for storage, reducing incident resolution time by **25%**.

### Conventia | React Native, FaceNet, Pyannote, Git

- Developed a **React Native** mobile app integrating **FaceNet** for facial recognition and **Pyannote** for speaker diarization, achieving **85% speaker identification accuracy** for Alzheimer's patients.

### Visual Assistant System | YOLOv3, Python

- Designed a real-time visual aid using **YOLOv3** to detect and classify objects in live video feeds, achieving **92% detection accuracy** for visually impaired users.

## TECHNICAL SKILLS

**Languages & Frameworks:** Python, Java, JavaScript, C, React.js, Tailwind CSS, Flask, Express.js

**AI/ML:** PyTorch, HuggingFace, LangChain, RAG, LLMs (LLaMA 3.1, Claude, GPT), OpenSearch, NumPy, Pandas, Scikit-learn

**Databases & Cloud:** MySQL, Oracle SQL, AWS (Bedrock, EC2, EKS, S3), GitHub Actions, Google Firebase

## ACHIEVEMENTS

- Toycathon (National Level Hackathon) – Winner:** Programmed a digital board game in Python that provides knowledge about Indian cultural heritage, shortlisted as one of the top 117 winners out of 1.2 lakh participants across India.
- Earned **AWS Certified Cloud Practitioner** certification from Amazon Web Services.