

# THARUN REDDY

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## Education

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**College of Engineering Guindy, Anna University**

**Aug 2018 – Apr 2022**

*Bachelor of Computer Science and Engineering — CGPA-8.2*

*Chennai, IN*

## Experience

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**Accenture**

**August 2022 – Present**

*AI/ML Engineering Analyst*

*Chennai, IN*

- Designed an end-to-end multi-modal RAG system using FastEmbed and CLIP, reducing manual documentation search time by 90% via real-time semantic search (Qdrant + AWS Greengrass). Developed an AI chatbot with Meta Llama-3.2-3b, improving response accuracy by 40% through cross-modal retrieval (text/images/videos) and automated SOP generation.
- Developed a generative AI system using Meta's LLaMA-3 with Intel optimization, enabling natural language to SQL translation via FastAPI for EdgeLake/AnyLog. Automated IoT data processing and insight generation using custom prompt engineering and ML pipelines.
- Built a Python IoT Edge SDK that improved network diagnostics efficiency by 40%, enabling real-time monitoring of bandwidth, latency, and streaming quality across 500+ edge devices.
- Engineered a modular test engine supporting 7+ network protocols, including bandwidth tests, ICMP latency, traceroute, and Playwright-based web monitoring. Implemented heartbeat tracking, ISP detection, and real-time interface monitoring using psutil. Integrated Azure IoT device management with twin synchronization, telemetry collection, and auto-config updates, achieving 99.9% uptime.
- Spearhead the development of hand detection using radar for user interaction in a software IDE(Imagimob), enhancing user experience by 25%.

**Beyond Universe Software Technologies**

**June 2021 – August 2021**

*Machine Learning Intern*

*Chennai, IN*

- Orchestrated and deployed machine learning models to analyze customer complaints, resulting in a 20% reduction in resolution time.
- Integrated ML-driven categorization into the CRM product, increasing customer support efficiency by 15%.

## Projects

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**Multiple Object Detection in UAV | Python, Deep Learning, OpenCV**

**March 2022**

- Integrated Faster R-CNN with FPN architecture for detecting objects in UAV images, achieving a 90% accuracy rate.
- Constructed object detection models to automatically identify and categorize objects in aerial images, such as vehicles, buildings, or infrastructure.
- Used image processing and computer vision to extract road networks, enhancing navigation accuracy by 20%.

**Air Writing Application | Python, Machine Learning, OpenCV, HTML, CSS**

**January 2021**

- Designed an image processing pipeline for capturing air-written characters in real-time, achieving a 95% accuracy rate.
- Engineered object tracking algorithms to accurately trace the movement of air-written characters as they are drawn in the air.
- Used CNNs to recognize and classify tracked characters into text, increasing recognition accuracy by 18%.

## Technical Skills

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**Programming Languages:** Python, C++, C, HTML/CSS, SQL

**ML/AI Frameworks:** Scikit-learn, TensorFlow, Keras, OpenCV, FastEmbed, CLIP, PyTorch (basic)

**AI/ML Concepts:** Supervised Learning, Classification, Object Detection, CNNs, NLP, Prompt Engineering, RAG (Retrieval-Augmented Generation)

**Tools & Platforms:** FastAPI, Pandas, NumPy, Matplotlib, Git, Docker, psutil, Imagimob, Linux, GitHub, VS Code

**Certifications:** AWS Developer Associate

## Leadership / Extracurricular

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**Industry Relations**

**April 2022 – July 2022**

*Director*

*SAAS*

- Cultivated relationships with corporate entities, alumni, and stakeholders, while coordinating pitch meetings and negotiations to secure vital financial support.

**Kurukshetra-Xceed**

**April 2022 – July 2022**

*Director*

*CTF*

- Led national outreach efforts with XCEED to boost Kurukshetra's visibility and participation through strategic planning, innovative events, and effective marketing. Also, assisted in logistics for a seamless participant experience.