Poorna Raavi

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EDUCATION

Clarkson University, New York | Master of Science – Computer Science | 3.8/4.0   **Jan 2024-Dec 2025**
Acharya Nagarjuna University | BTech - Computer Science & Engineering | 9.8/10   **Aug 2019- May 2023**

PROFESSIONAL EXPERIENCE

Research Assistant, *Clarkson University, Potsdam, NY*   **May 2024- Present**
- ➢ Unity Developer, Luge Track Visualization Tool
  - Built a 3D luge track visualization platform in Unity using C++/OpenCascade, giving Park City athletes a VR-based training tool ahead of Olympic qualifiers.
  - Expanded pipeline for international tracks (incl. Spain's Olympic-grade course), enabling early remote practice opportunities.
- ➢ Unity/VR Developer, Gait Sensory Interaction Test (GaitSIT)
  - Developed a VR-based gait assessment system on Meta Quest 3 for portable, low-cost analysis of walking dysfunctions.
  - Validated accuracy vs. force-plate measures (≥0.99 correlation, sub-cm error) by simulating stride-frequency visual perturbations.
- ➢ VR/DL Engineer, On-Device Age Estimation in VR
  - Deployed MobileNetV3 for pediatric age estimation on Oculus Quest 2, enabling real-time (<10 ms) inference for safe, age-appropriate VR content.
  - Optimized with AMP, ONNX/TFLite FP16, and Unity Barracuda, achieving sub-20 ms latency across desktop, edge, and immersive platforms

Horizons Graduate Assistant, *Clarkson University, Potsdam, NY, USA*   **August 2024- Present**
- Improved program decision-making by analyzing survey data in Tableau, shaping the 2025 Horizons workshop strategy.
- Enhanced student experience planning by integrating CRM + program data into yearly reports.

Jr. Android Developer, *EmbedSense Solutions Pvt Ltd, Bengaluru, India*   **June 2023 – Dec 2023**
- Built Hoist Pro, a hoist monitoring app with real-time alerts (WhatsApp/Email) and daily cloud reports.
- Developed Ecotron, an environmental monitoring app with Firebase authentication for secure access.

Android Developer Intern, *OSOS Pvt Ltd, Hyderabad, India*   **Jan 2023- June 2023**
- Improved user experience by implementing card view listings for local businesses and fixing UI bugs.
- Expanded app reach by adding multi-language support, improving accessibility.

TECHNICAL SKILLS

Programming: Python, Java, C#, C, R, SQL, C++
Mobile & Web: Android Studio, React, Figma, Unity, VR
Data & ML: Deep Learning, ML, NLP, LLM, Tableau, SQL
DevOps & Cloud: Git, Docker, AWS, CI/CD, JIRA

PROJECTS

AWS Deployment with GitLab CI | github   **May 2025- Aug 2025**
- Designed and built a scalable, production-ready CI/CD pipeline to automate the ML model lifecycle ML Operations principle to automate the entire workflow from code commit to live cloud deployment, including build, test and deployment stages.

Audio Tampering detection (forensic) | CITER   **Jan 2025- Apr 2025**
- Experimented with fine-tuning deep learning models (CNNs on spectrograms and transformer-based embeddings) to detect audio splicing and cuts. Built synthetic tampering datasets for training and evaluation, achieving promising results in identifying anomalies despite incomplete end-to-end deployment.

Text Analysis and Retrieval for Federal Datasets | github   **Sept 2024 – Dec 2024**
- Achieved an F1-score of 0.93 on federal agency prediction from a large dataset of unstructured federal abstracts, by developing a multi-label classification pipeline using TF-IDF, Naive Bayes, and Neural Networks in Python/Keras.

Fine-Tuned Emotional Classifier CLI | github   **May 2025 – Aug 2025**
- Delivered a professional-grade command-line interface, enabling pip-installable deployment, by fine-tuning DistilBERT on emotion data and packaging the app into a complete MLOps workflow.

Toxic Comment Classifier using GPT-2 | github
- Improved toxic comment classification to a high F1-score, by fine-tuning GPT-2 with custom preprocessing, tokenization, and hyperparameter tuning.

Publication

Ocular Age: A comparative study of Iris and Periocular Images for Pediatric Age Estimation
IEEE transactions on Visualization & Computer Graphics   document/11096571

HACKATHONS & SEMINARS

VR Seminar- Delivered a talk on VR applications in healthcare, demonstrating how GaitSIT simulates stride-frequency visual perturbations to evaluate balance.   **Spring 2025**

Hexathon 2023 Built an object detection system for drone cameras in 24 hours, improving aerial monitoring by training and deploying a YOLO-based model.   **Spring 2023**

GenHack 3.0- Developed an AI medical bot in 36 hours for preliminary healthcare diagnostics, integrating NLP models to handle symptom queries and suggest possible conditions.   **Fall 2023**

Entrepreneurship- Completed training on sustainable practices in the green economy, applying entrepreneurial frameworks to early-stage project ideas.   **Fall 2023**