

Harika Yarlagadda

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Education

University of Minnesota Duluth

Master of Science in Computer Science - CGPA: 3.87/4.00

Aug' 2023 - May 2025

Duluth, MN

Bapatla Engineering College

Bachelor of Technology in Computer Science and Engineering - CGPA: 9.58/10.0

Aug' 2019 - Apr' 2023

Andhra Pradesh, India

Technical Skills

Languages: Python, Java, C, C++

Data Science/ML: Machine Learning, Artificial Intelligence, Deep Learning, Power BI

Web/Backend: JavaScript, Node.js, React, HTML/CSS, MySQL, Django

Tools/Frameworks: Git, Android Studio, AWS (Basics), VS Code, MS Office tools

Concepts: OOP, DSA, Software Design Principles, Agile & Sprint Planning

Soft Skills: Team Collaboration, Public Speaking, Problem-Solving, Curious

Project Experience

Project Aegis | Python, Docker, GitHub Actions, Model Context Protocol (MCP), NASA API

- Architected a real-time AI agent that empowers Large Language Models (LLMs) to autonomously interface with live NASA telemetry, enabling accurate detection and risk analysis of hazardous near-Earth objects.
- Engineered a production-ready CI/CD pipeline using GitHub Actions to automatically test, build, and publish containerized microservices to the GitHub Container Registry, ensuring a seamless "zero-dependency" deployment.
- Implemented the cutting-edge Model Context Protocol (MCP) to bridge the gap between static AI knowledge and dynamic scientific data, eliminating hallucinations by grounding responses in real-time API verification.

VisionToSketch | Python, Flask, OpenCV, HTML/CSS

- Created and launched a dynamic web application that lets users turn their images into beautiful pencil drawings. The program, which was created using OpenCV and Python Flask, has an easy-to-use interface and provides immediate visual results.

LLaMA 2 Chatbot for Customer Support | Python, LLaMA 2, Hugging Face, PyTorch,

- Created a sophisticated customer service chatbot using the LLaMA 2 large language model, combining a Gradio web interface with transformer-based conversational intelligence. For best results, effective tokenization and generation techniques were put into use.

Online Banking System | Java, REST API, SQL

- Developed a Banking System application using Java and MySQL to manage customer accounts and track transactions in real-time. Implemented a secure database solution to store customer information and transaction histories, ensuring timely updates as new transactions occur.

Auto Insurance Customer Churn Detection | Machine Learning, Python

- Designed and assessed machine learning models incorporating Random Forest, reaching 74% accuracy on a dataset of customer records through data wrangling, preprocessing, and hyperparameter tuning. Developed proficiency in predictive analytics, feature engineering, and model evaluation measures.

BulldogOnBoard | Flutter, Dart, Figma, Git, Sprint Planning, UI/UX Design

- In order to streamline the onboarding process for recently enrolled students, a mobile application using Flutter was developed to offer a centralized platform for accessing academic assistance, event information, and campus services.

Research and Professional Experience

Graduate Research Assistant

University of Minnesota Duluth

Aug' 2024 - May 2025

Duluth, MN

- * Developed a HIPAA-compliant, non-intrusive monitoring system for real-time tracking of parent-infant interactions in the NICU and achieved 70% strong approval in surveys. Utilized Python Django for secure data transformation and storage, and Java for mobile app development with automated camera control and location tracking.

Graduate Teaching Assistant

University of Minnesota Duluth

Aug' 2023 - May 2024

Duluth, MN

- * Supported C++ programming courses, helped students on debugging, optimization, and core concepts including DSA.

Systems Engineer Internship

Tata Consultancy Services

Feb' 2023 - Apr' 2023

Hyderabad, India

* Completed professional web trainings on Data Privacy, Information Security, Basic IP Awareness, Environment Sustainability, and Workplace Safety at TCS. Gained knowledge and hands-on-experience on security protocols, responsible data handling, and corporate sustainability practices essential for IT environments.

Web Developer Intern

Exposys Data Labs

May 2022 - June 2022

Bengaluru, India

* Created a secure, responsive e-commerce online application with capabilities for order management, cart management, dynamic product listings, and user authentication utilizing JavaEE, Servlets, JSP, HTML, CSS, and JavaScript.

Certifications & Professional Development

Virtual Experience Programs (Forage) | Jan 2025

BCG GenAI: Built financial chatbot from 10-K/10-Q data using rule-based logic.

Goldman Sachs: Simulated IT security analysis for governance assessment.

PwC Power BI: Designed KPI dashboards tailored to client needs.

Responsible AI (Google Cloud, Jan'25) | **Generative AI with LLMs (AWS, Aug'24)** | **Introduction to Generative AI (Google Cloud, May'24)** | **Machine Learning - Specialization (Stanford University, Jan'24)**

Publications

Pemble, F, Yarlagadda, H, Clarke-Sather, A, Cevasco-Trotter, A, Sandbulte, J, Zhao, TC, Silverman, M, & Wang, S. "Measuring Heart Rate Synchrony for a Patient-Music Therapist Dyad." *Proceedings of the 2024 Design of Medical Devices Conference. 2024 Design of Medical Devices Conference*. Minneapolis, MN, USA. April 8–10, 2024. V001T04A013. ASME. <https://doi.org/10.1115/DMD2024-1068>

Yarlagadda H, Sandbulte J, Downs E. Challenges and enhancement of health: a dual impact of kangaroo care on parents and infants-systematic review. *Mhealth*. 2025 Jun 9;11:36. doi: 10.21037/mhealth-24-80. PMID: 40755941; PMCID: PMC12314710.

Yarlagadda, H., Sandbulte, J., Wang, S., & Clarke-Sather, A. (2025). Supporting parent-child bonding and attachment practices in the NICU: designing and evaluating a non-intrusive health monitoring solution. *Proceedings of the Design Society*, 5, 2941-2950.

Yarlagadda, H., Sandbulte, J., Clarke-Sather, A., & Wang, S. (2025, April). Design of a Non-Intrusive Health Monitoring System to Facilitate Parent-Child Interactions During Hospitalization. In *Frontiers in Biomedical Devices* (Vol. 88735, p. V001T03A003). American Society of Mechanical Engineers.

Yarlagadda, H., Sandbulte, J., Clarke-Sather. The Dual Impact of Remote Health Monitoring on Caregiver Stress and Well-being: A Systematic Review (Preprint, JIMR)

Volunteer Work

Course Assistant at University of Minnesota Duluth | Sep 2025

Treasurer of International Club University of Minnesota Duluth | Aug 2024 - May 2025

IoT Workshop organizer at Bapatla Engineering College | Aug 2021

English Club (AAWAZ) Coordinator at Bapatla Engineering College | Aug 2021 - May 2022