Harika Yarlagadda

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Education

University of Minnesota Duluth   **Aug' 2023 - May 2025**
Master of Science in Computer Science - CGPA: 3.87/4.00   *Duluth, MN*

Bapatla Engineering College   **Aug' 2019 - Apr' 2023**
Bachelor of Technology in Computer Science and Engineering - CGPA: 9.58/10.0   *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   **Aug' 2024 - May 2025**
University of Minnesota Duluth   *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   **Aug' 2023 - May 2024**
University of Minnesota Duluth   *Duluth, MN*
  * Supported C++ programming courses, helped students on debugging, optimization, and core concepts including DSA.

Systems Engineer Internship   **Feb' 2023 - Apr' 2023**
Tata Consultancy Services   *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   **May 2022 - June 2022**
Exposys Data Labs   *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