

Madhuri Tumula

+1 (817) 714-5122 | madhurutumula@gmail.com | [LinkedIn/madhurutumula/](https://www.linkedin.com/in/madhurutumula/) |

EDUCATION

Georgia State University

Jan 25 - Present

Master of Science in Computer Science (GPA: 3.87/4.3)

Relevant Coursework: Mobile Application Development, Web Programming, Cryptography, Fundamentals of Cyber Security

Guru Nanak Institute of Technology

October 2020 - May 2024

Bachelor of Technology in Computer Science and Engineering (CGPA: 8.22/10)

Relevant Coursework: Data Structures & Algorithms, Object Oriented Programming, Database Systems, Operating Systems, Computer Networks.

SKILLS & TOOLS

Programming Languages: Java, Python, C, C++, MATLAB

Web & App Development: HTML, JavaScript, CSS, ReactJS, AngularJS, NodeJS, Android Studio, PHP

Data Management: MySQL, Oracle SQL, REST APIs, JSON

Tools & Platforms: VS Code, Jupyter, Anaconda, Git, GitHub, Eclipse, Selenium, PyAutoGUI

WORK EXPERIENCE

Graduate Research Assistant, Institute of Insight- Robinson College of Business

Jan 24 – Present

- Analyzed Bloomberg terminal data to derive trends in supplier/customer networks for financial forecasting.
- Designed and evaluated LLMs for sentiment and emotion classification on 10K+ dealership reviews, boosting accuracy by 18%.
- Built a Python-based screenshot & OCR pipeline using VS Code, Anaconda, and pytesseract, generating structured JSON and Excel outputs.
- Automated data entry tasks, reducing manual processing time by 80% and accelerating model training workflows.

Research Intern, CSIR – Indian Institute of Chemical Technology

Jan 2023 - June 2023; Jan 2024 - Sept 2024

- Built and deployed PCA-based ML model for fault detection in chemical plants, improving anomaly precision by **22%**; automated preprocessing and tuning pipeline boosted research efficiency by **30%**.
- Co-authored scientific paper draft on hearing-related data analysis; led data visualization and feature extraction from collected datasets.
- Presented work through a **CEES Conference abstract** leveraging ML model insights for BRM data.

PROJECTS

Identity-Based Authenticated Data Sharing Protocol for Cloud Server

Java, JavaScript, JSP, Tomcat, AWS

- Developed a lightweight, identity-based encryption (IBE) protocol for secure data sharing in cyber-physical cloud environments, integrating end-to-end encryption, anonymous authentication, and role-based access control; achieved **35% faster response time** compared to existing baseline systems.
- Published findings in the peer-reviewed international journal **JETIR**, enhancing academic and industrial relevance of identity-based encryption models.

Adversarial Machine Learning – Attacks & Defenses in AI Systems

Python, PyTorch, NumPy, Matplotlib, Google Colab

- Designed a framework to evaluate and defend deep learning models against adversarial attacks on MNIST and CIFAR-10 datasets.
- Implemented white-box attacks (FGSM, BIM, PGD) and adversarial training to improve model robustness.
- Visualized and compared clean vs. adversarial inputs; demonstrated model vulnerability and defense effectiveness.

STOXIE – Stock Market Tracker App

Flutter, Firebase, Firestore, Finnhub API

- Developed a real-time stock market tracker app using Flutter and Firebase, enabling personalized portfolio tracking and reducing lookup time by 40%. Integrated Finnhub API for livestock data and news, enhancing user experience with dynamic insights.
- Designed a scalable Firestore schema and implemented Firebase Auth for secure login and persistent user preferences.
- Utilized Provider for state management to modularize components, improve maintainability, and ensure future scalability.

ACHIEVEMENTS AND CERTIFICATIONS

- Top 7 Team – Virtusa Blockchain Hackathon (South Zone India), 2023**
- Java Full Stack Certification - **Wipro**, October 2023
- Introduction to Cyber security - **Cisco**, Jan 2023
- Block chain Basics and Smart Contracts - **University at buffalo, SUNY**, November 2023