JAHNAVI PRIYA BOMMAREDDY

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Education

The University of Georgia **August. 2023 – May 2025**
Master of Science in Computer Science, (CGPA:3.88/4) *Athens, Georgia*

National Institute of Technology Patna **August. 2019 – May 2023**
Bachelor of Technology in Electronics and Communication Engineering,(CGPA: 8.83/10) *Bihar, India*

Skills

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

Data Science Tools & Technologies: Machine Learning,Deep Learning,NLP,Data Visualization (Tableau,Power BI), Big Data (Apache Spark), AWS (Lambda,S3,RDS), Pandas, Numpy, PyTorch, ETL Pipelines, Dash.

Databases & Tools: SQL, MySQL, DBMS, Tableau, VSCode, Git, Github, Postman

Web Development: Angular, JavaScript, HTML, CSS, Django, Dash, Flask

Backend & DevOps: REST APIs, Docker, GitHub Actions, Gunicorn, MVC Architecture, CI/CD Pipelines

Other Skills: Data Analysis, Data Structures and Algorithms, Artificial Intelligence, Software Engineering, Agile Methodologies, Software Development Life Cycle, Spring Boot, Object-Oriented Design.

Experience

UGA CAES-Agriculture, Leadership, Edu & Communication **March 2024 – May 2024**
Student Research Assistant *Athens, Georgia*

- Conducted data processing and statistical analyses under Dr. Peng Lu's guidance.
- Applied machine learning techniques, enhancing sentiment analysis and topic modeling accuracy by 80% on large datasets.
- Assisted in preparing results for manuscripts and collaborating on research publications.

Test AIng Solutions Pvt.Ltd.(AiEnsured.com) **January 2023 – April 2023**
Machine Learning Intern *Bengaluru, Karnataka*

- Enhanced image pipeline activities, improving model explainability by 20% using advanced techniques..
- Collaborated on live video feed monitoring using an object detection model, reducing false detections by 15% and increasing overall detection accuracy by 70%, contributing to enhanced academic integrity.
- Increased object detection model robustness, resulting in a 40% improvement in detection accuracy.

Indian Institute of Technology Patna **June 2022 – July 2022**
Research Intern (Remote) *Patna, Bihar*

- Analyzed disaster tweets with unsupervised methods, achieving a 10% increase in information extraction accuracy using VEC.

Projects

Cinema E-Booking System | *Angular, MySQL, Spring Boot*

- Collaborated in a Agile environment to develop a web-based platform for booking movie tickets, featuring a user-friendly interface and admin panel for site management, reducing average response time by 20%.
- Designed and integrated a MySQL database, enhancing query response efficiency by 15%.
- Implemented backend functionalities using Spring Boot and enhanced user experience through Angular.

Bike Store Management System | *Django, MySQL, Python, HTML*

- Built a web-based application for managing customer orders, staff data, and inventory,decreasing manual processing efforts by 20% .
- Designed and implemented a normalized database schema (BCNF, 3NF),reducing redundancy and improving data integrity by 30%.
- Integrated MySQL with Django, boosting overall application speed by 15%.

Red-Teaming Attacks on LLM Agents (Cactus and PaperQA) | *LLM Agents, Red Teaming, Vulnerability Analysis*

- Designed and executed prompt injection attacks on LLM agents (Cactus and PaperQA), achieving a 50% attack success rate on Cactus and 40% success rate on PaperQA by bypassing tool restrictions and manipulating workflows.

- Conducted agent profiling by crafting adversarial prompts, analyzing behaviors, and refining attacks using JailJudge and custom datasets.
- Achieved 91.3% evaluation grade through systematic vulnerability assessment and analysis of agent weaknesses.

Forecasting Dashboard for COVID-19 Trends | *Dash, Plotly, Python, Docker, GitHub Actions*

- Built an interactive web dashboard to visualize time-series forecasts with dynamic model selection and timelines.
- Integrated deep learning models (PatchTST, GRU, NLinear) into a modular backend for real-time predictions.
- Automated CI/CD deployment using GitHub Actions and hosted the app on Render with Docker.

Brain Tumor Classification using Machine Learning | *Python, Keras, Tensorflow*

- Devised a Convolutional Neural Network (CNN) model for image classification, detection, and segmentation.
- Leveraged TensorFlow's powerful Image Data Generator to augment and enrich the data set, enhancing model robustness by 15%.
- Achieved an impressive accuracy rate after meticulously crafting and optimizing the model with the Adam optimizer, reducing training time by 35%.

Publications

Published research article in Optics through Elsevier. The paper is titled 'Implementing the circularly polarized THz antenna with tunable filtering characteristics.'