Jahnavi Priya B

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SUMMARY

- Computer Science graduate student with experience in full-stack web development and data-driven systems using Python, Java, SQL, Angular, Spring Boot, and AWS.
- Built and deployed end-to-end applications and ML pipelines, improving detection accuracy by 70% and automating workflows with Docker and CI/CD.
- Skilled in designing secure, scalable software and explainable AI systems; contributed to academic research, agile product teams, and real-world software delivery.

EDUCATION

University of Georgia **Athens, GA**
Master of Science, Computer Science ***GPA: 3.86/4.00*** ***May 2025***
Courses: Algorithms, Database Management, Machine Learning, Computer Networks, Software Engineering, Adv Special Topics - Red Teamming on LLMs, Internet of Things Security.

National Institute of Technology Patna **Patna, India**
Bachelor of Technology, Electronics and Communication Engineering ***GPA: 8.83/10*** ***May 2023***
Awarded 3 prestigious merit-based scholarships for academic excellence:
1.FFE Scholarship (Foundation For Excellence) - for academic merit.
2.AWOO Foundation Scholarship - awarded for top academic performance
3.NSP Scholarship (National Scholarship from the Government of India)- merit-cum-means scholarship by Govt. of India

SKILLS

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

Data Science & Machine Learning: Machine Learning, Deep Learning, Natural Language Processing (NLP), Supervised & Unsupervised Learning, Feature Engineering, Statistical Analysis, Sentiment Analysis, Topic Modeling (LDA), Model Evaluation & Optimization, Model Explainability (LIME, SHAP, Grad-CAM, Score-CAM), Time Series Forecasting, Text Mining, Prompt Engineering.

Data Engineering & Big Data: ETL Pipelines, Apache Spark, AWS (Lambda, S3, RDS), Basic File Handling (CSV, JSON, Excel), REST APIs, Actively learning: Data Cleaning, Integration, Warehousing & Pipeline Automation.

AI & LLM Engineering: Artificial Intelligence, Computer Vision, Convolutional Neural Networks (CNN), Transformers, GRU, LSTM, GANs, LLM Agents (PaperQA, Cactus), Red Teaming Attacks, JailJudge Evaluation, Generative AI.

***Frameworks & Libraries*:** Pandas, NumPy, Scikit-learn, TensorFlow, Keras, PyTorch, OpenCV, NLTK, Matplotlib, Seaborn, Plotly, Dash.

Data Visualization & BI Tools: Tableau, Power BI, Matplotlib, Seaborn, Plotly, Dash.

Web Development: Angular, JavaScript (Redux), HTML, CSS, Flask, Django, Spring Boot, React.

DevOps & Backend Technologies: Docker, GitHub Actions, CI/CD Pipelines, Gunicorn, MVC Architecture, Version Control (Git, GitHub), LINUX(Ubuntu) ,Backend APIs .

Databases & Tools: SQL, MySQL, DBMS, Postman, MongoDB (Basics), VSCode, Jupyter Notebook, Excel, Postgres, Node.js .

Software Engineering & Development: Object-Oriented Programming (OOP), Software Development Life Cycle (SDLC), Agile Methodologies, Code Optimization, System Design.

Productivity & Collaboration Tools: Microsoft Office Suite (Excel, Word, PowerPoint, Outlook, Teams), Google Sheets, Adobe PDF, SharePoint, Smartsheet *and basic VBA Macros.*

WORK EXPERIENCE

Neuro-Symbolic Computing Research Lab, University of Georgia **Athens, GA**
Project Researcher (Supervisor: Dr. I. Budak Arpinar) ***Aug 2024 – May 2025***
- **Dashboard Development:** Built an interactive forecasting dashboard using **Dash** and **Plotly** to visualize COVID-19 trends with model selection, timeline filtering, and dynamic graphs.
- **Model Integration:** Integrated deep learning models (**PatchTST**, **GRU**, **NLinear**) for real-time, multi-step time-series forecasting using a modular Python backend.
- **CI/CD & Cloud Deployment:** Configured **GitHub Actions** for automated deployment and deployed the containerized app on **Render**, leveraging Docker-based cloud hosting.
- **Data Engineering:** Preprocessed COVID-19 datasets, performed **feature engineering**, and applied rolling window techniques to generate time-series inputs for deep learning models.

UGA CAES- Agriculture, Leadership, Edu & Communication **Athens, GA**
Student Research Assistant ***Mar 2024 – May 2024***
- **Data Collection & Engineering:** Scraped and processed **3,600+** Amazon reviews using Helium 10 and Pandas for NLP analysis.
- **NLP & Modeling:** Applied NLTK's Sentiment Intensity Analyzer (SIA) and LDA to improve sentiment/topic modeling by **80%.**
- **Visualization & Insight Generation:** Visualized sentiment trends using Seaborn, Matplotlib, and Word Cloud to derive actionable insights.
- **Research Collaboration**: Collaborated with Dr. Peng Lu on manuscripts, contributing code, statistical analysis, and insights.

Test AIng Solutions Pvt. Ltd. (AiEnsured.com) **Bengaluru, India**
Machine Learning Intern ***Jan 2023 – April 2023***
- **Object Detection & Annotation**: Boosted real-time object detection accuracy by **70%** using YOLOv5; annotated **15K+** frames

via LabelImg.
- **Model Explainability:** Enhanced explainability by **20%** using Grad-CAM, SHAP, and LIME to visualize model decisions.
- **Testing & Automation:** Applied metamorphic testing (MR1–MR5) and automated video frame processing with Python.
- **System Reliability:** Reduced false detections by **15%,** improving the robustness of AI-based proctoring systems.

Indian Institute of Technology Patna **Patna, India**
Research Intern ***Jun 2022 – July 2022***
- **Tweet Clustering & Analysis:** Analyzed disaster-related tweets using VEC, KMeans, and DBSCAN to improve extraction accuracy by **10%.**
- **NLP Preprocessing**: Cleaned and tokenized tweet text using NLTK and SpaCy to enhance vector-based representations.

PROJECTS

Cinema E-Booking System | Angular, MySQL, Spring Boot
- Collaborated in an 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 Jail Judge and custom datasets.
- Achieved **91.3%** evaluation grade through systematic vulnerability assessment and analysis of agent weaknesses.

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%.**

CERTIFICAITIONS & ACHIEVEMENTS

- NPTEL Online Certification- An Introduction to Programming through C++ - IIT Bombay Received an Elite-Silver Batch.
- NPTEL Online Certification – The Joy of Computing Using Python- IIT Ropar.

PUBLICATIONS

- Published research article in Optics (Elsevier): 'Implementing the circularly polarized THz antenna with tunable filtering characteristics' (https://doi.org/10.1016/j.rio.2023.100377)