Poorna Pallavi Tekkali

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Professional Summary

Computer Science graduate, specializing in **full-stack development**, **software engineering**, **data science**, and **AI/ML engineering**. Combines academic excellence with professional experience at **Amazon** as an **Investigation Specialist**, achieving **30% reduction in fraudulent transactions** and **25% decrease in security breaches** through advanced pattern recognition techniques and rule-based detection strategies. Advanced proficiency in **Python**, **Java**, **JavaScript**, and **C/C++** with demonstrated success in **NLP implementation**, **sentiment analysis modeling**, and developing **scalable web applications**. Expert in leveraging **cloud technologies** (AWS, Azure) and modern development methodologies, reinforced by comprehensive certifications in **Google Data Analytics** and advanced software engineering practices. Merges cutting-edge academic research in **AI/ML** and **data mining** with enterprise-level implementation of business intelligence solutions using machine learning to drive operational excellence and strategic decision-making.

Education

University of Texas at Arlington **Arlington, TX**
Master of Sciences in Computer Science **Aug 2023 – May 2025**
GPA: 3.8/4.0

Coursework: Data Mining, Web Development, Artificial Intelligence, Machine Learning, Software Design Patterns, Cloud Computing, Big Data, Distributed Systems

Experience

Investigation Specialist, Amazon *Oct 2021 - Jul 2023*

- **Investigated suspicious merchant activities** using Amazon's internal investigation tools and data analysis techniques. Reviewed transaction patterns, account behaviors, and merchant documentation to identify potential fraud cases, resulting in a **30% reduction in fraudulent activities** and improved platform security for customers and legitimate merchants.
- **Developed and implemented fraud detection rules** within Amazon's existing systems to automatically flag suspicious merchant behavior. Created detection criteria based on transaction patterns, account registration details, and behavioral indicators, leading to a **25% reduction in security breaches** and more efficient case processing.
- **Collaborated with cross-functional teams** including product managers, engineers, and other investigation specialists to resolve complex fraud cases and improve detection processes. Participated in team meetings, shared insights from investigations, and contributed to process improvements that enhanced overall team efficiency.
- **Analyzed large datasets** of merchant and transaction information using SQL queries and Amazon's internal analytics tools. Identified trends and patterns in fraudulent behavior that helped inform new detection strategies and contributed to policy updates for merchant onboarding and monitoring.
- **Documented investigation findings** and maintained detailed case records in compliance with Amazon's standards and regulatory requirements. Trained new team members on investigation procedures and best practices, ensuring consistent quality and knowledge transfer across the investigation team.

Technical Skills

Programming Languages: Python, JavaScript, Java, PHP, SQL, C/C++

Web Development: React.js, Node.js, Express.js, HTML5, CSS3, Bootstrap, Laravel, RESTful APIs, Full Stack Development

Data Science & Machine Learning: Machine Learning, Deep Learning, Natural Language Processing, Computer Vision, Statistical Analysis, Predictive Modeling, Data Mining

Libraries & Frameworks: Pandas, NumPy, Scikit-learn, TensorFlow, Keras, PyTorch, NLTK, Flask, Django

Databases: MySQL, MongoDB, SQL Server, Data Warehousing

Visualization & Analytics: Tableau, Power BI, D3.js, Matplotlib, Plotly, Chart.js

Cloud & Big Data: AWS, Azure, Hadoop, Apache Spark, Docker, Cloud Computing

Development Tools: Git, GitHub, VS Code, Jupyter Notebooks, Agile, SDLC

Key Projects

BCG-X Generative AI Virtual Internship

Git Repository

- **Developed an AI-powered financial chatbot prototype** leveraging Python and rule-based logic to deliver interactive insights on 10-K/10-Q financial data. Built conversational interface that enables users to query complex financial information through natural language interactions.
- **Extracted, cleaned, and analyzed complex financial datasets** from 10-K reports (2022–2024) for Microsoft, Tesla, and Apple using pandas for data manipulation. Processed multi-year financial data to ensure consistency and accuracy across different reporting periods and companies.
- **Created clear mappings between user queries and financial metrics** (revenue, net income, EPS, cash flow) enabling accurate, real-time chatbot responses. Implemented intelligent query parsing to translate natural language questions into specific financial data retrievals.
- **Applied fundamental NLP principles and error handling** to simulate natural, user-friendly chatbot conversations. Incorporated robust exception handling and input validation to ensure reliable performance across various user interaction scenarios.
- **Gained hands-on experience in financial data interpretation** and transforming static reports into actionable, interactive tools. Demonstrated ability to bridge technical implementation with practical business intelligence applications for financial analysis.

Sentiment Analysis on Customer Feedback

Git Repository

- **Developed a web application** for analyzing customer sentiment using Python and machine learning libraries. Built a React front-end interface that allows users to input text and view sentiment analysis results, with a Python backend handling the data processing and model predictions.
- **Implemented LSTM neural network models** using TensorFlow and Keras to classify sentiment from customer reviews. Trained the model on a dataset of customer feedback, achieving **81.5% accuracy** in sentiment classification through data preprocessing and model tuning.
- **Created interactive visualizations** using Chart.js and D3.js to display sentiment trends and analysis results. Built dashboards that show sentiment distributions and allow users to filter and explore the data through an intuitive web interface.
- **Built data processing pipeline** using Python and pandas to clean and prepare customer feedback data for analysis. Implemented text preprocessing techniques including tokenization, stop word removal, and feature extraction to improve model performance.
- **Deployed the application** using standard web hosting practices with proper version control through Git. Set up the project structure to handle both frontend and backend components with clear documentation for future development and maintenance.

Smart Health Care Hub

Git Repository

- **Built a healthcare management web platform** supporting different user roles including patients, healthcare providers, and administrators. Implemented user registration, login functionality, and role-based access to different features like appointment scheduling and medical record management.
- **Developed responsive web interface** using HTML5, CSS3, JavaScript, and PHP with MySQL database backend. Created forms for user registration, appointment booking, and data management with client-side validation and server-side processing for reliable functionality.
- **Implemented security features** including password hashing, input validation, and basic access controls to protect user data. Applied web security best practices to prevent common vulnerabilities and ensure safe handling of healthcare information.
- **Created messaging system** allowing communication between patients and healthcare providers through the platform. Built notification features for appointment reminders and system updates using email integration and in-app messaging.
- **Designed database schema** to efficiently store user information, appointments, and healthcare records. Optimized database queries and implemented proper indexing to ensure good performance as the application scales.

Detection of Cyber Attacks

Git Repository

- **Developed a cybersecurity application** for detecting potential security threats using machine learning algorithms. Built a web interface that allows users to input URLs or network data and receive threat assessment results based on trained models.
- **Trained classification models** using scikit-learn and Python to identify malicious websites and security threats. Achieved **92% precision** in threat detection by testing different algorithms including Random Forest and Support Vector Machines on a dataset of known malicious and legitimate websites.
- **Built interactive dashboard** using Bootstrap and JavaScript to display security analysis results and threat visualizations. Created user-friendly interfaces that present complex security data in an accessible format for non-technical users.

- **Implemented automated analysis features** that process security data and generate reports on potential threats. Used Python scripts to automate data collection and analysis workflows, reducing manual effort in security assessment tasks.
- **Created data processing system** to handle various types of security data including network logs and website characteristics. Built ETL processes using Python to clean, transform, and prepare data for machine learning model training and real-time analysis.

Professional Certifications

Google Data Analytics Professional Certificate – Google (Coursera)

Data Science Job Simulation – British Airways (Forage)

HTML, CSS, and JavaScript for Web Developers – Coursera

Walmart Advanced Software Engineering Program – Walmart (Forage)