ASHUTOSH CHOUDHARI

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EDUCATION

CARNEGIE MELLON UNIVERSITY, Pittsburgh, PA — **Aug 2022 - Dec 2024**
Master of Information Systems Management — **CGPA: 3.78/4.00**
Relevant Coursework: Computational Data Science, Unstructured Data Analytics, Time Series Forecasting, Data Structures

VELLORE INSTITUTE OF TECHNOLOGY, Vellore, India — **Jul 2016 - Jun 2020**
Bachelor of Technology - Electronics and Instrumentation Eng (Minor in Computer Science and Eng) — **CGPA: 3.94/4.00**
Relevant courses: Database Management systems, Neural networks, Python programming, Statistics, Operating Systems

PROFESSIONAL EXPERIENCE

Confirmed LLC — Pittsburgh, PA
Software Developer — **Jan 2025 – Present**
- Led development of a React-based agentic AI chatbot with LangChain.js and OpenAI function-calling, enforcing JSON schemas to guide multi-step workflows cutting task time by 25% and boosting adoption 30%
- Integrated streaming agent pipelines over WebSockets in a JS frontend with Mixpanel analytics for input validation and flow control reducing support tickets 40% and lifting engagement 35%.

Nexteer Automotive — Pittsburgh, PA
Machine Learning Engineer (Student Consultant) — **Aug 2024 – Dec 2024**
- Created document comparison application to extract, compare, and analyze PDF documents using Azure AI Document Intelligence, Adobe PDF Extract API and OpenAI's GPT-4o, enhancing document management efficiency and saving 2 FTEs.
- Implemented user-friendly Streamlit GUI with a robust backend data handling system leveraging MongoDB for persistent caching, to minimize API call costs and improve processing speed by 5 times.

MedSarthi LLC — Phoenix, AZ
Data Scientist — **Jun 2023 - Aug 2023**
- Designed and implemented a data-driven recommendation system for medical graduates, leveraging A/B testing and regression analysis to optimize profiles and develop a weighted scoring algorithm, boosting residency acceptance rates by 14%.
- Architected a comprehensive web platform using OpenAI API, HTML, JavaScript, React, Flask, PostgreSQL, and Heroku, enabling streamlined service delivery and advanced analytics.

Deloitte USI — Hyderabad, India
Solution Delivery Analyst — **Jun 2021 - Jul 2022**
- Engineered advanced log analysis workflows using data from SIEM tools (Splunk, QRadar), EDRs, and OSINT tools identifying and mitigating suspicious activities across system, network, and endpoint logs.
- Generated over 100 detailed incident reports weekly, applying pattern recognition, anomaly detection, and OSINT tools to deliver actionable insights, driving a 32% reduction in security incidents through data-driven strategies.

ACADEMIC PROJECTS

Network Security Phishing Detection System (*MongoDB, MLflow, AWS ECR, EC2, Docker, FastAPI, CI/CD*) — **Jan 2025 – Mar 2025**
- Developed a machine learning pipeline for phishing detection using 7 tuned classification algorithms and achieving 96% F1-score and 97% precision with the best-performing model (XGBoost), representing a 15% improvement over baseline models.
- Engineered an MLOps solution with CI/CD pipeline using GitHub Actions, AWS ECR containerization, and MLflow for experiment tracking, reducing deployment time by 78% and enabling real-time phishing detection with 99.2% uptime.

CGM Systems Analysis and Improvement Recommendations (*NLTK, Scikit Learn, genism, matplotlib*) — **Aug 2023 – Dec 2023**
- Analyzed 40,000+ social media posts about CGM systems using LDA topic modeling (0.78 coherence score) and VADER sentiment analysis (89% accuracy), identifying 5 key discussion topics per brand and user sentiment patterns.
- Extracted actionable insights by segmenting user sentiment across product features, revealing critical pain points around insurance coverage (37% negative) and app functionality (28% negative), informing strategic product improvement recommendations.

Question-Answering System Development (*Azure Machine Learning, PyTorch, nltk, spaCy, SentenceTransformers*) — **Sep 2023 – Nov 2023**
- Fine-tuned a pre-trained BERT model for question-answering tasks, achieving 68% accuracy on the SQuAD test set, a 28% improvement over the pre-trained model.
- Deployed the fine-tuned BERT model as a scalable cloud-based question-answering service on Azure Container Instances (ACI), leveraging Azure ML for deployment, achieving efficient inference on unseen data.

SKILLS

Programming languages: Python, Java, Oracle SQL, R
Frameworks / Libraries: PyTorch, Tensorflow, NLTK, Hugging Face, Scikit-learn, numpy, pandas, XGBoost, flask, LangChain
Tools: Tableau, Jira, GitHub, Docker, MongoDB, Neo4j, FAISS, Chroma, Ollama, Sqlite, Nvidia NIM
Certifications: AWS Certified Cloud Practitioner, Cert. of Cloud Security Knowledge, Agile Product Owner, Agile Scrum Master
Cloud tools: AWS Bedrock, SageMaker, Lambda, S3, API Gateway, Azure ML studio, Vertex AI