Ninad Deshpande

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Education

Master of Science in Computer & Information Science (May 2025) GPA 3.79
Indiana University - Purdue University, Indianapolis

Bachelor of Engineering in Computer Engineering (May 2022) CGPA 9.25 / 10.00
Savitribai Phule Pune University

Experience

Mailroom Assistant Jan 2025 – May 2025
University Library, Indiana University Indianapolis
Indianapolis, IN

- Executed efficient mailroom operations, managing high-volume incoming and outgoing library deliveries.
- Proactively developed Python automation tool using Selenium to streamline OCLC code extraction from MARC records, improving interlibrary loan processing efficiency.
- Automated institutional data parsing from OCLC directories, generating structured CSV/TXT reports that eliminated 90%+ of manual processing tasks.

Projects

Cyberbullying Detection with Distributed Computing
Python, BERT, LogReg, Cohere, Distributed Systems, ML, NLP

- Designed peer-to-peer distributed system architecture for multilingual cyberbullying detection, addressing scalability challenges in content moderation across English, Hindi, Marathi, and Bengali languages.
- Implemented Subject Matter Expert (SME) clustering to create specialized detection nodes, simulating domain-specific expertise in distributed computing environments.
- Developed ensemble consensus strategies using incremental learning with dynamic trust weighting, achieving macro F1 scores of 85-92%.
- Conducted comprehensive evaluation of 180+ model configurations, demonstrating effectiveness of distributed architectures for multilingual NLP tasks.

AI-Driven Cloud Auto-Scaling System
Python, AWS, SageMaker, Lambda, CloudWatch, Machine Learning

- Developed an AI-driven predictive scaling system using AWS services to optimize resource allocation and reduce operational costs by 15-25% compared to traditional auto-scaling methods
- Implemented time-series forecasting model with Amazon SageMaker using Linear Regression to predict CPU usage 15 minutes ahead, achieving macro-F1 scores of 0.85+ across test datasets.
- Engineered automated scaling pipeline with AWS Lambda, CloudWatch metrics collection, and Auto Scaling groups for near real-time resource management.

Enigma Machine Simulator
Python

- Simulated the WWII Enigma encryption mechanism with configurable rotor and plugboard settings.
- Built an interactive command-line interface to demonstrate encryption-decryption cycles.
- Added persistent message history and automated cipher routines for usability.

Skills

Programming Languages: Java, Python, C/C++, JavaScript, SQL, R
Web, Cloud & DevOps: HTML/CSS, JavaScript, NoSQL (MongoDB), AWS, Git, GitHub
Core Competencies: Machine Learning, Distributed Programming, Database Design, Data Analysis, Predictive Analytics, Time-Series Forecasting, Cloud Computing, Prompt Engineering

Publication

- "A Modular Approach to Customer Relationship Management (CRM) Systems"
  International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)
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