

MANISHA YADAV

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PROFESSIONAL SUMMARY

AI/ML engineer with a Master’s in Computer Science and hands-on experience in developing scalable, secure ML workflows and cloud-based data pipelines. Internship at an AI security company (HiddenLayer) focused on model testing infrastructure, monitoring workflows, and compliance-aware architecture documentation. Strong foundation in semantic search, RAG, LLMs, and distributed systems (GCP, Databricks, AWS). Skilled in translating technical solutions into user-centric, secure, and product-aligned features. Known for mentoring, clear communication, and aligning engineering outcomes with business and compliance goals.

EDUCATION

MS in Computer Science | Portland State University
Bachelor of Information Technology | Saurashtra University

CORE COMPETENCIES

Machine Learning(ML) | Natural Language Processing(NLP) | Deep Learning | Generative AI | Prompt Engineering | Python Programming | Data Analysis | Data Visualization | Big Data Technologies | Cloud Computing (AWS, GCP) | ETL Processes | Data Pipeline Development | Predictive Analytics | Time Series Analysis | Data-Driven Decision Making | Cross-Functional Collaboration | Project Management | Product Development | Document and Diagramming : Technical Writing, UML Diagramming, Business Process Mapping | RAG Architecture | Context-Search &Vector Databases | SSMS | SQL Query

SKILLS

Programming Languages:	Python, C/C++, C#.Net, JavaScript, and Scala
ML & AI:	TensorFlow, PyTorch, Hugging Facescikit-learn, Keras, OpenCV
NLP/LLMs :	Word2Vec, GloVe, BERT, GPT-2, T5, GPT-models, Llama-2
Semantic Search & Vector Databases:	RAG Architecture: Milvus, Pinecone, FAISS
Databases:	MySQL, PostgreSQL, MongoDB, PySpark in Databricks
Cloud Technologies:	Microsoft SSMS (familiar) , ETL Processes and Data Pipelines GCP: Vertex AI for Fine-tuning and deploying ML models, G-API AWS: EC2, S3, Lambda, SageMaker, API Gateway
DevOps and Security:	Git, GitHub, GitLab, GitHub Actions, Docker, Jenkins, GitLab CI,
Product and Business Analysis Tools:	Jira, Confluence, UML, Lucidchart, Draw.io
AI Development Platforms:	Vertex AI, NVIDIA AI Workbench, OpenAI Codex, HuggingFace, Relay.app - automation workflows ,by integrating AI agents or triggering actions across various tools.
Web Development:	HTML5, CSS3, React, Bootstrap, Tailwind CSS, Node.js

WORK HISTORY

TECHNICAL LEAD Sept 2024 - Present — VOLUNTEER

Women in Big Data: NW chapter – Portland, OR

- Mentored a team in developing a context-aware travel assistant using secure RAG architecture with vector search; team earned 3rd place in a competitive hackathon.
- Core Organizer team for WiBD AI Summit 2025, curating speaker sessions and managing a poster session to translate academic AI research into industry-ready, compliant applications.
- Mentored students on research communication, elevating their professional visibility and engagement by emphasizing security and ethical AI practices.

LEAD OF STEM PROGRAMS AND ENGAGEMENT (Contract) May 2025- July 2025

Rose City Robotics – Portland, OR

- Built and deployed technical onboarding materials and outreach programs to scale student participation in FIRST Robotics.

ML ENGINEER (INTERNSHIP) Apr 2024 - Aug 2024

HIDDENLAYER – Remote

- Developed ML infrastructure at an AI security company focused on protecting model integrity and securing data pipelines.
- Developed a Model Library with 100+ models for internal ML testing, optimizing workflows, and enhancing cross-team collaboration.
- Created detailed architecture and data flow diagrams using Lucidchart to document model structures
- interactions, and system integration points for cross-functional teams.
- **Built Data Science toolkit** for managing model uploads and downloads between Hugging Face and S3, significantly improving pipeline efficiency by implementing a system to prevent redundant scans.
- **Improved ML workflows** in Databricks, ensuring clean, scalable efficient code.
- Participated in code reviews, maintaining high standards through peer feedback, added pre-commit checks on existing codebase, and GitHub actions.

ROBOTICS COACH Sept 2022-Present

FIRST TECH Robotics: Waves, Flames and Games – Portland, OR

- Introduced students to **FIRST TECH LEGO robotics** and **block-based programming**, guiding them through the **FIRST LEGO League (FLL)** season.
- Fostered **teamwork, communication, and creative confidence** in a collaborative learning environment.
- Mentored teams for competitions, including **two qualifier tournaments**, with the team advancing to the **Oregon State FLL Tournament**.

PROJECT HIGHLIGHTS – MS in Computer Science (AI/ML and Data Engineering)

Portland State University – Portland, OR

Apr 2022-June-2024

NLP and Artificial Intelligence Projects:

- **Legal RAG Assistant:** Developed a Retrieval-Augmented Generation (RAG) application to retrieve and summarize complex legal documents using OpenAI GPT-3.5, Milvus vector store, and Streamlit. Implemented context-aware search for improved legal relevance and document comprehension.
- **Multimodal feature Extraction with Vertex AI:** Fine-tuned the Text-Bison 32k model on Google Cloud Vertex AI to extract multimodal features from scientific papers. Benchmarked performance against T5 and Gemini Pro Vision using ROGUE, BLEU and F1 metrics, achieving gain in performance in tasks involving text and visual context understanding, demonstrating improvements in structured summarization and content alignment.
- **Paper-to-Podcast:** Developed a summarization pipeline using transformer models (T5, GPT-3.5/4) to generate page-wise and aggregated summaries of research papers. Created a structured JSON dataset and evaluated outputs using ROUGE. Enhanced accessibility by integrating audio generation to convert summaries into podcast-style narration.

Software Development Projects:

- **Food Order app for Homecooks:** Developed a React-based food ordering application with Vite, Tailwind CSS, and PostgreSQL. Integrated Firebase authentication and deployed the containerized app using Docker for scalable hosting.
- **Language Translator:** Flask application using Google Cloud Translation APIs for text translation and transcription to bridge the gap in communication across multi-generational families with diversity.

Machine Learning and Data Analysis Projects:

- **Image Denoising:** Implemented TensorFlow autoencoders for image denoising, trained on real-world datasets and Evaluated model performance using PSNR and SSIM metrics for visual quality assessment.
- **Spam Classification:** Developed models using decision trees and random forests to classify spam emails. Compared classification accuracy, precision, and recall across models to optimize performance.
- **Database Management:** Collaborated on building a movie database management system using Python and PL/SQL, including schema design, data manipulation, and SQL querying and backend architecture visualization through UML diagrams in Lucidchart.

ACADEMIC ROLES AND RESPONSIBILITIES | India

Lecturer | Sant Longowal Institute of Engineering and Technology

Oct 2008 - Jan,2010

- Delivered lectures, graded assignments, conducted lab exercises, and organized technical conferences.
- Mentored final year projects for undergraduate and diploma students.

Instructor | NIIT Ludhiana

Apr 2008 - Sept 2008

- Led boot camps for C, C++, C#, SQL-05, .Net, and Java while mentoring team projects.

Intern | Bhaskaracharya Institute of Space Application and Geoinformatics

Jan 2007 - May 2007

- Developed a web-based GIS application using ASP.NET and SQL Server. Created a self-guided tour of tourist locations in Gujarat with interactive map views.