Mohid Tanveer

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Applied ML engineer developing and evaluating models on large real-world datasets in research and production settings. Built end-to-end pipelines for machine learning, LLM, and recommender systems with emphasis on model quality and real-world usability.

SKILLS

Programming Languages: Python, C, C++, Java, JavaScript, TypeScript, SQL, R, Bash, HTML/CSS
Tools and Platforms: Git, Node.js, React, REST APIs, Docker, Kubernetes, Linux (RHEL), Virtual Machines, PostgreSQL
ML and Data Science: Power BI, TensorFlow, PyTorch, LangChain, PySpark, NumPy, SciPy, Pandas, Matplotlib, Scikit-learn

WORK EXPERIENCE

St. Jude Children's Research Hospital   **September 2024 - May 2025**
Student Machine Learning Engineer, Research Systems   *Memphis, TN*

- Owned the design and deployment of a production RAG-based LLM system serving **~300 internal users** across computational biology, HPC engineering, and research support teams.
- Reduced ServiceDesk **ticket volume by 80%** over a one-month evaluation window by deflecting repetitive support questions using historical ticket analysis and a curated internal knowledge base.
- Deployed and engineered an OpenAI-compatible local LLM inference service on an **HPC cluster**, enabling secure, low-latency internal usage without external API dependencies.
- Built and evaluated a full retrieval and response pipeline, including semantic indexing, custom retrievers, and automated benchmarking against **600 historical tickets** to optimize deflection rate, latency, and failure cases.
- Built and productionized end-to-end ML pipelines for **two research projects**, processing **multi-terabyte research datasets** into evaluated models and deployable workflows supporting ongoing computational biology research.

Applied Data Science Intern   **May 2024 - August 2024**

- Collected and analyzed month-long, minute-level network telemetry across multiple campus locations by benchmarking 10 GB data transfers between HPC, research buildings, and data center systems to identify performance bottlenecks.
- Built an ML-based anomaly detection and monitoring pipeline that surfaced a degraded network closet switch, enabling a configuration fix that improved network throughput by **~15%** for cluster-backed research workloads.
- Owned a production microservice to asynchronously convert large bioimaging datasets, ranging from **multi-gigabyte to multi-terabyte TIFF volumes**, integrating with an internal imaging data hub and Slurm-managed cluster resources.
- Eliminated manual imaging conversion workflows and improved conversion throughput by **~30%** by implementing a Python-based conversion wrapper and centralized job orchestration via Slurm, accelerating downstream researcher analysis.
- Implemented logging, data visualization dashboards, and utilization analysis across Windows and Linux workstations, influencing resource reallocation decisions and **reducing unused software licenses and underutilized systems**.

PROJECTS

Tubify - *Personal Project converted to Senior Capstone Project*   **February 2024 - April 2025**

- Led the design and development of a full-stack social music discovery platform used by **approximately 150 students**, enabling music video/live performance playlists, friend-based recommendations, and daily personalized music feeds.
- Built scalable data pipelines to ingest and analyze approximately **20,000 tracks** over the testing period, extracting audio, lyrical, and interaction features and persisting them in a PostgreSQL-backed feature store.
- Engineered overnight GPU-accelerated audio analysis workflows to process large music libraries while managing server load and minimizing user-facing latency.
- Implemented a batch-oriented recommendation system that refreshed daily recommendations by combining collaborative filtering, content-based audio features, clustering, and MMR re-ranking to balance relevance and diversity.
- Evaluated recommendation quality using offline ranking metrics and user similarity analysis, emphasizing artist and genre coverage rather than raw prediction accuracy.

ScreenSense - *Course Project*   **September 2025 - December 2025**

- Built a hybrid computer vision system to detect screen re-photography using a **500-image** mixed-authenticity dataset.
- Achieved **perfect class separation** on course benchmarks by fusing EXIF-based metadata classifiers with pixel-level signal analysis, outperforming baseline models and meeting inference-time constraints for real-world verification use cases.

EDUCATION

University of California, San Diego   **September 2025 - December 2026**
M.S. Computer Science & Engineering, Overall GPA 3.9/4.0   *San Diego, CA*

- **Specialization in AI/ML with relevant courses in** Recommender Systems and Web Mining, Probabilistic Reasoning & Learning, ML: Learning Algorithms, Algorithm Design and Analysis, Unsupervised Learning, Computer Security.

Rhodes College   **August 2021 - May 2025**
B.S. Computer Science, Overall GPA 3.91/4.0   *Memphis, TN*

- **Relevant courses**: Machine Learning, Artificial Intelligence, Mathematical Statistics, Statistical Analysis, Multivariable Calculus