Farzan Mirza

farzan.mirza@drexel.edu • Philadelphia, PA 19104 • 215-498-6165

linkedin.com/in/farzan-mirza13 • github.com/Farzanmrz

EDUCATION

Drexel University, Philadelphia, PA   June 2025 (Expected)
Master of Science in Artificial Intelligence and Machine Learning   Current GPA: 4.0

Virginia Tech, Blacksburg, VA   May 2022
Bachelor of Science in Computational Modelling and Data Analytics, (Minor: CS and Mathematics)

TECHNICAL SKILLS

- **Programming Languages:** Python, R, MATLAB, SQL, Java, C

- **Machine Learning:** TensorFlow, PyTorch, Numpy, Pandas, Keras, Scikit learn, SciPy

- **Databases and Cloud Platforms:** MySQL, AWS EC2, RDS, S3, Route 53

- **Tools:** Git, Bash, SSH, CI/CD, JMP, Latex, Rmd, Google Workspace, Microsoft Office

WORK EXPERIENCE

Optium Data Solutions LLP — *Lead System Architect,* New Delhi, India: June 2022 – August 2023

- Implemented a cross-platform ERP system, by leading a team of 10+ developers to streamline modules across procurement, manufacturing, HR, accounting, and sales.

- Integrated Laravel backend with Angular web and Android frontends in AGILE manner, leveraging a MySQL stack and AWS services (EC2, RDS, S3) with GitLab CI/CD pipelines for a dynamic deployment system.

- Conducted daily client check-ins to align team deliverables with their expectations and adapt system functionalities accordingly, effectively bridging the client-team gap and elevating client satisfaction

KEY PROJECTS

AI Research: 2D Context Transformer for Spreadsheet Metadata Prediction: August 2024 – Present

- Pioneered a transformer model architecture designed to capture 2D contextual relationships within and around each cell for accurate metadata prediction of spreadsheets.

- Developed a GPU-accelerated, batch-optimized tensor representation for spreadsheets to enable computationally efficient, faster training of model with no loss in performance.

- Adapted the SAFFU model with BPE tokenizer for reduced vocab size and enhanced 2D context capturing using self-attentive feed-forward layers, optimizing training and improving model performance.

Adversarial Abstractive Summarizer with BART and CNN Models: March 2024 – June 2024

- Developed a GAN-based abstractive summarization model, employing BART for summary generation and a CNN-based discriminator with Word2Vec embeddings to classify summaries as human or machine-generated.

- Optimized training with policy gradient updates, leveraging adversarial feedback from discriminator evaluations to generate progressively more human-like summaries.

- Outperformed all baseline models in original research across ROUGE metrics, achieving a notable 16-point gain in ROUGE-2, indicating coherent and contextually enhanced human-like summary generation

Stock Movement Prediction: October 2023 – December 2023

- Analyzed the latest two months of S&P500 stock data, applying feature engineering to 5-minute intra-day intervals, to conduct time-series analysis and predict stock direction across 66 stocks

- Designed ensemble models using native classifiers with a weighted voting scheme and RandomForest

- Illustrated effectiveness of ensemble techniques by achieving $> 65\%$ prediction accuracy

RELEVANT COURSEWORK

- Natural Language Processing
- Computer Vision
- Artificial Intelligence
- Social Network Analytics
- Deep Learning
- Machine Learning