Piyush Hinduja

Salt Lake City, UT | (385) 507-6190 | *piyush.hinduja@utah.edu*
LinkedIn: linkedin.com/in/piyush-hinduja/ | GitHub: github.com/piyushinduja

EDUCATION

The University of Utah, *Salt Lake City, Utah* **GPA: 3.9/4.0**
MS: Computer Science *August 2023 - May 2025 (Expected)*
Relevant Courses: *Graduate Algorithms, NLP w/ Deep Learning, Manage Data with & using ML, Operating Systems, Computer Architecture, System & Software Security*

University of Mumbai, *Bandra, India* **CGPA: 9.54/10.0**
BE: Computer Engineering *July 2019 - May 2023*
Relevant Courses: *Data Structures and Algorithms, Machine Learning, Deep Learning, NLP, Quantitative Analysis, Database Management, Big Data, Computer Networks, Theoretical Computer Science*

TECHNICAL SKILLS

Programming Languages: C, *C++, JavaScript, Java, Kotlin, Python, Dart, SQL*
Libraries: *NumPy, Pandas, Scikit-Learn, Matplotlib, PyTorch, Tensorflow, HuggingFace, PySpark, OpenCV*
Software Tools: *GitHub Desktop, Docker Desktop, MS Suite (Word, PowerPoint, Excel), OverLeaf*
Web Development: *HTML, CSS, JavaScript, NodeJS, ReactJS*

WORK EXPERIENCE

Data Analyst | The University of Utah*, Salt Lake City, Utah* *March 2024 - Present*

- Constructed a predictive model based on the study 'Forward-Looking MD&A Disclosures and the Information Environment," **Muslu et al. 2015**.
- Successfully identified forward-looking statements in company filings with a **25% improvement** in prediction accuracy.
- Developed a model to scrape, clean, and analyze filings from EDGAR in **6 seconds per filing**.

PROJECTS/RESEARCH

Dependency Parser *GitHub Link*

- Implemented a Natural Language parsing technique using PyTorch, inspired by "A Fast and Accurate Dependency Parser using Neural Networks" (**Chen and Manning, 2014**), decreasing the computational complexity by **33%**.
- Trained on **four GloVe embedding sets** with varying learning rates, achieving a **UAS of 0.76** and **LAS of 0.705**.
- Transformed datasets, generated embeddings, built a neural network, and used UAS and LAS scores for evaluation.

Road Damage Detection and Classification *YOLOv5, FasterRCNN* *GitHub Link*

- Collaborated with a team of four to implement road damage detection using **YOLOv5** and **FasterRCNN**, leveraging the **RDD-2020 dataset** with images from three countries.
- Achieved **accuracies** of **52.67%** with YOLOv5 and **44.45%** with FasterRCNN by training and fine-tuning models.
- Designed an user-friendly web application using **Streamlit**, enabling users to upload images and visualize detected road damages.

Language Modeling *GitHub Link*

- Developed an **LSTM-based RNN** to predict character sequences, enhancing probabilistic language modeling, and achieving a **perplexity measure of 9.43**.
- Employed **teacher forcing** during training and evaluated the model using the perplexity metric.
- Also engineered a **N-gram statistical model** incorporating **Laplace smoothing**, reducing zero probability issues, and achieving a **perplexity of 17.85**.

Symptom Based Disease Detection *LSTM, BERT, HuggingFace* *GitHub Link*

- Created a model to recommend drugs based on patient symptoms using two distinct neural network architectures in PyTorch: an **LSTM with GloVe embeddings** and a **BERT-mini classifier**.
- Attained **F1 scores** of **77.43%** with the BERT-mini model and **70.71%** with the LSTM model by optimizing batch sizes and learning rates for effective symptom-based classification.
- Leveraged advanced NLP techniques in **healthcare applications for preliminary diagnosis**.

EXTRA CURRICULAR

- Head Event Manager - Indian Society of Technical Education
- Volunteer - Simran Seva NGO, India
- Badminton and Cricket player