

Tejal Rawale

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Education

Master of Science in Artificial Intelligence Sep 2021-May 2023
Northeastern University, Boston, MA, USA GPA : 3.75/4
Related courses: Foundation of AI, Algorithms, Machine Learning, Data Mining, NLP, Computer Vision, CHI.

Bachelor of Computer Engineering Jul 2013 - May 2017
University of Mumbai, Mumbai, MH, India GPA: 8.52/10
Related courses: Distributed Data, Software Engineering, Object Oriented Analysis & Design, Big Data Analytics.

Technical Knowledge

Languages & web tech: Python, Java, C, C++, HTML5, Css, Javascript, Nodejs, AngularJS, Agile (Scrum), Google Cloud (GCP), Docker
AI : Machine Learning, Data Science, Deep Learning, Regression, Classification, Clustering, Explainable AI (XAI)
Data Engineering: SQL, NoSQL(MongoDB), ETL, EDA, AB Testing, Kafka, Hadoop, Visualization: Matplotlib, Seaborn, Looker, Tableau
Others: AWS (S3, EC2 Athena, Redshift), pytorch, tensorflow, keras, nltk, spacy, scikit-learn, pandas, numpy, flask, H2O autoML

Professional Experience

Squark AI, Boston, USA Sep 23 - Present
Machine Learning Engineer

- Engineered **feature extraction** and **data curation** pipelines, improving predictive **modeling efficiency** and speed.
- Enhanced predictive model transparency by presenting **SHAP summary graphs** for the predictive models.

Abecedarian, LLC, Boston, USA Sep 23 - Present
Generative AI Researcher

- Created a graphic novel based on the children's story by implementing **prompt engineering** using **ChatGPT & MidJourney** AI tools.
- Improved **creative output quality** by **20%** by blending images & used prior generated images to obtain consistency in context & style.

Northeastern University, Boston, USA Sep 22 - May 23
Graduate Teaching Assistant

- Aided students in DS 3000 Foundation of **Data Science** course, offering guidance through regular OH on several topics - Python, Data Wrangling, **Statistical Modeling, Hypothesis Testing and Machine Learning Pipeline** & Hyper-parameter tuning.

Graduate Research Assistant Mar 23 - Apr 23

- Supported research efforts in **regenerative AI**, scraped & integrated data on jobs from multiple sources to build database.
- Explored & analyzed various existing research on methodologies suitable for **skill extraction** from unstructured text data.

BNP Paribas, Mumbai, India Jun 17 - Jul 19
Software Engineer, Associate Software Engineer

- Data Analysis: Derived key insights using **SQL** from extracted data (developed **ETL pipeline**) on distinct data sources.
- Automation: Developed **REST APIs** and **UI** for a new in-house application that **automates** manual tasks of on-boarding.
- Full Stack Development: Collaborated with several stakeholders in all **SDLC phases** of a crucial M&A project based on **Business Intelligence** in an agile team. **Consistent leading contributor** to team's velocity in all the sprint cycles.
- Maintainability: Focused on reducing **technical debts**, improving **code quality** & documentation & handled **technical migration** of two critical projects. Conducted **knowledge transfer** sessions for three new members of the team.
- Awarded '**Champion of the Month**' in 6 months for being a quick learner and performing independent tasks as a fresher.

Brav Conflict Management, San Francisco, USA/ Remote Nov 16 - May 17
Software Development Intern

- Worked on back-end using **NodeJS** and **MongoDB**, on frontend using **AngularJs** and **Bootstrap** and integrated payment gateway using **Stripe API**. Performed Unit & Integration Testing before every release to deliver **bug-free** products.

Key Projects

Data Analysis Projects

- NYC TLC Data Analytics :** Conducted data analysis using **Python**, **GCP** Storage, Compute Engine, **BigQuery**, Mage **Data Pipeline** tool. Created interactive visualizations with **LookerStudio** to communicate findings effectively & facilitate data-driven decisions.
- Telco Customer Churn Prediction :** Built an robust churn prediction model, surpassing **baseline by 5%**, through comprehensive data exploration, preprocessing, **feature engineering**, & the application of various machine learning algorithms such as **logistic regression**, **support vector**, **decision tree**, **random forests**, & **gradient boosting**, with hyperparameter tuning to find the best model.

Deep Learning Projects (NLP, Computer Vision)

- In-depth Movie Review Analysis :** Processed textual information using normalization, lemmatization, tokenization and **TF-IDF** vectorization. Performed **Sentiment Analysis** on IMDB reviews dataset using Supervised ML models & neural network **LSTM-RNN**. Implemented Topic Modeling using **NMF & LDA** on the movie's meta data that was web scraped using **Selenium** from the IMDB site.
- Real-Time Eye Gaze Tracking using OpenCV :** Performed statistical analysis on various classifiers such as **HaarCascade**, **Dlib**, and **Caffe** to detect faces, eyes. Applied **image processing techniques** to optimize & interpret gaze direction.
- Dog Breed Identification from the Images :** Conducted statistical analysis on Classification models and Neural Network to detect the dog's breed. Improved accuracy through scaling, **normalization**, **bounding box annotation**, & **augmentation** techniques.
- Image Caption Generation :** Designed an Image captioning system in four architectures - **encoder-decoder**, **multimodal**, **encoder-decoder with attention**, & **encoder-decoder with transformers** using the Flickr-8k Dataset. Employed ResNet, Inception, & VGGNet encoders, **greedy** and **beam search** for sentence generation and **Bleu score** for evaluation.