VIKRAM J. SHENOY

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EDUCATION

Northeastern University, Boston, MA, USA **Sept 2019 – May 2021**

- Master of Science in Computer Science.

Mumbai University, Mumbai, India **July 2014 – May 2018**

- Bachelor of Engineering in Computer Engineering: **GPA: 3.63/4.0**.

WORK EXPERIENCE

Technical Consultant, Annadhan Welfare Organization (Mumbai, IN) **Jan 2019 – July 2019**

- Operated as a pro bono technical consultant for design and development of Annadhan's mobile application in collaboration with J.P. Morgan Chase & Co.
- Created a workflow for application's functionalities in accordance to organization's day-to-day operations.
- Designed a sleek, consistent, and user-friendly interface for mobile application targeting all age groups.

Machine Learning Research Intern, University of Groningen (Groningen, NL) **Aug 2018 – Oct 2018**

- Performed an extensive analysis of proposed feature selection algorithm as compared to existing feature selection methods such as Fisher Score, Generalized Matrix Learning Vector Quantization (GMLVQ), ReliefF and Boruta.
- Devised a new weighting scheme which considerably improved algorithm's performance and efficiency for larger datasets.
- Gained extensive knowledge about ensemble methods such as Random Forests, AdaBoost, and XGBoost.

Software Engineering Intern, **Vroom Cars (Irvine, CA, USA)** **Feb 2017 – Aug 2017**

- Researched On-board Diagnostics Parameter IDs (OBD – II PIDS) - codes used to request data from vehicles.
- Implemented an algorithm to extract and transform raw data received through a mobile application into structured format.
- Created automated software to convert structured data from a local database into multiple user-friendly graphs.

PROJECTS

Understanding Capsule Networks (PyTorch and Google Colab) **Aug 2019**

- Built a Capsule Network and implemented dynamic routing algorithm that functions as a forward pass for entire network.
- Achieved a final accuracy of 99.91% on training set and an accuracy of 98.80% on test set of MNIST dataset.
- Gained a deeper understanding of state of features captured by 16-dimensional vector of Digit Capsule Layer.

Music Recommendation using Deep Learning (Keras and Google Colab) **May 2019**

- Preprocessed data by producing mel-spectrograms for 8000 audio files, each of 30 seconds, from Free Music Archive dataset.
- Designed a CNN on Google Colab for classifying 60,000 image slices of these mel-spectrograms into 8 different genres.
- Predicted latent feature vectors using final network and established strong cosine similarity score between one song (anchor) and other similar songs in test set.

Digit Generation using Wasserstein Generative Adversarial Networks (Keras and Google Colab) **Apr 2019**

- Trained a Wasserstein GAN on MNIST dataset utilizing an estimate of Wasserstein metric as a cost function for 90,000 epochs.
- Generated images of digits by randomly sampling through a noise distribution and passing these samples through generator network.

Twitter Sentiment Analysis using Recurrent Neural Networks (Keras and Google Colab) **Mar 2019**

- Preprocessed over 1.6 million positive and negative tweets from Stanford's Sentiment140 dataset.
- Constructed a Recurrent Neural Network with Long Short-Term Memory units to analyze sentiment of these tweets.
- Achieved an accuracy of 84.57 % on test set and employed final network to yield a degree of sentiment on user entered text.

Neural Style Transfer with Convolutional Neural Networks (Keras and TensorFlow) **Feb 2019**

- Transferred artistic style of one image onto another image utilizing a pre-trained VGG19 network with Imagenet weights.
- Generated final image by selecting intermediate layers of network and reducing overall loss (style loss and content loss).

Games using Artificial Intelligence, Undergraduate Final Year Project **May 2018**

- Programmed an AI for chess and a famous tile puzzle game, 2048, leveraging fundamental aspects of Game Theory.
- AI for Chess is based on Minimax algorithm with alpha-beta pruning and AI for 2048 employs Expectimax algorithm.

TECHNICAL SKILLS

- **Programming Languages:** Python (Expert), Java (Proficient), C (Familiar).
- **Frameworks and tools:** Keras, PyTorch, TensorFlow, Plotly, Scikit-Learn, Matplotlib, Pandas, Google Colab, Android Studio.
- **Web Development and Data-oriented Languages**: HTML, CSS, PHP, JavaScript, Ajax, SQL.

ACHIEVEMENTS

TSEC Leadership Award **Mar 2018**

- Awarded the TSEC Leadership Award for co-founding and heading the Rotaract Club of TSEC in its inaugural year.