

# VIKRAM J. SHENOY

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## EDUCATION

**NORTHEASTERN UNIVERSITY**, Boston, MA, USA

September 2019 - May 2021 (Exp.)

- Master of Science in Computer Science.

**MUMBAI UNIVERSITY**, Thadomal Shahani Engineering College, 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

- Working as a pro bono technical consultant towards the design and development of the official Annadhan application in collaboration with J.P. Morgan Chase & Co.
- Created a work flow for the application's functionalities in accordance to the organization's day-to-day operations.
- Designed a sleek, consistent and user friendly interface for the application.

**Machine Learning Research Intern, University of Groningen (Groningen, NL)**

Aug 2018 – Oct 2018

- Performed an extensive analysis of the proposed feature selection algorithm as compared to existing feature selection methods such as Fisher Score, Generalized Matrix Learning Vector Quantization (GMLVQ), ReliefF and Boruta.
- Developed a new weighting scheme for the algorithm that considerably improved its performance for larger datasets.
- Gained extensive knowledge about ensemble methods such as Random Forests, AdaBoost, and XGBoost.
- Working towards a journal paper that will be published along with the proposed algorithm as a software package.

**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 a vehicle.
- Implemented an algorithm to extract and transform raw data received through a mobile application into structured format.
- Developed an automated software to convert the structured data from a local database into multiple user-friendly graphs.

## PROJECTS

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

May 2019

- Preprocessed the data by generating mel-spectrograms of audio files from the Free Music Archive dataset.
- Designed and trained a Convolutional Neural Network on Google Colab using slices of these mel-spectrograms for classification.
- Predicted latent feature vectors using the trained network and established a similarity score between one song (anchor) and the rest of the songs in the test set using cosine similarity.

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

April 2019

- Trained a Wasserstein GAN on the MNIST dataset using an estimate of the Wasserstein metric as the cost function.
- Generated digits by randomly sampling through a noise distribution and passing them through the trained generator network.

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

March 2019

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

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

Feb 2019

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

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

May 2018

- Developed an AI for chess and a famous tile puzzle game, 2048, using fundamental aspects of Game Theory.
- The AI for Chess is based on the Minimax algorithm with alpha-beta pruning and the AI for 2048 uses the Expectimax algorithm.

**Blue Scroll, Android Application**

May 2017

- Developed a real-time android news aggregation application with the help of a JSON API for retrieving the latest news articles.
- Built an algorithm that parses and retrieves data from different news streams in under one second using JSON and Java.

## TECHNICAL SKILLS

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

## ACHIEVEMENTS

**TSEC Leadership Award**

March 2018

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