VIKRAM J. SHENOY

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EDUCATION

Khoury College of Computer Sciences, Northeastern University, Boston, MA   May 2021
Candidate for Master of Science in Computer Science: **GPA: 4.0/4.0**
Related Courses: Program Design Paradigm, Foundations of Artificial Intelligence, Machine Learning, Algorithms

University of Mumbai, Mumbai, India   May 2018
Bachelor of Engineering in Computer Engineering: **GPA: 3.63/4.0**
Related Courses: Machine Learning, Artificial Intelligence, Data Warehousing & Mining, Algorithms, Data Structures, Object Oriented Programming Methodology, Structured Programming Approach, Distributed Databases

PUBLICATION

- Ahmad Alsahaf, Nicolai Petkov, Vikram Shenoy, George Azzopardi (2020), *A framework for feature selection through boosting*, Manuscript submitted to Information Sciences.

PROFESSIONAL EXPERIENCE

University of Groningen   August 2018 – October 2018
Machine Learning Research Intern
- 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
- Researched and devised a new weighting scheme using Python resulting in considerable improvement in algorithm's performance
- Gained extensive knowledge about ensemble methods such as Random Forests, AdaBoost, and XGBoost

Vroom Cars   February 2017 – August 2017
Software Engineering Intern
- Researched On-board Diagnostics Parameter IDs (OBD – II PIDS) for different types of vehicles
- Developed software with Python, SQL, and Plotly to transform raw data from various vehicles into multiple graphs hosted on a temporary website coded through PHP, HTML, CSS, and JavaScript
- Decreased cost to company by creating more than 50 subplots on a single graph utilizing one API call

ACADEMIC PROJECTS

Naïve Background Style Transfer (Keras and TensorFlow)   December 2019
- Created a binary mask for input image which segments foreground from background using Google's DeepLabv3+ pre-trained model
- Performed style transfer using generated mask for guiding stylized pixels onto background of content image to form an image filter

Understanding Capsule Networks (PyTorch and Google Colab)   August 2019
- Built a Capsule Network and implemented dynamic routing algorithm functioning 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

Twitter Sentiment Analysis using Recurrent Neural Networks (Keras and Google Colab)   March 2019
- Pre-processed 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 analyse 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

TECHNICAL SKILLS

- **Programming Languages:** Python (Expert), Java (Expert), 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