VIKRAM J. SHENOY

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TECHNICAL SKILLS

- **Programming Languages:** Python, Java, C, TypeScript, HTML, CSS, PHP, JavaScript, Ajax, SQL
- **Frameworks and tools:** PyTorch, Keras, TensorFlow, AWS Services (Kinesis, Lambda, KMS, SQS, S3, SNS, CloudWatch, CDK) Plotly, Scikit-Learn, Matplotlib, Pandas, Google Colab, Android Studio, JUnit, Mockito, PowerMock, Dagger 2

PROFESSIONAL EXPERIENCE

Amazon - Alexa AI   May 2020 – Present
Software Development Engineer - Intern
- Prototyped fan-out Identity Function implementation of Alexa features representing feedback with dynamically configurable sources (SQS and Kinesis) and sinks (SQS, Kinesis, S3, and CloudWatch)
- Created a lambda function as a compute platform which auto-scales and transfers KMS encrypted data along with another lambda function as a configurable compute plane
- Optimized lambda memory by using Dagger Dependency Injection to simplify access to shared instances
- Constructed a CI/CD pipeline with integration tests and unit test coverage

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

PUBLICATION

- Ahmad Alsahaf, Nicolai Petkov, Vikram Shenoy, George Azzopardi (2020), *A framework for feature selection through boosting*, Manuscript under review at the Information Sciences Journal

ACADEMIC PROJECTS

Multi-Layer Capsule Network for Recognition of Facial Features (PyTorch and Google Colab)   April 2020
- Proposed enhanced architecture of original Capsule Network model that provides required flexibility to generate encodings for capturing highly complex relationships between features
- Provided detailed analysis of new method (MLCN) along with state of the art facial recognition architectures such as Siamese CNN, FaceNet (Casia-Webface), and FaceNet (VGGFace 2)
- Achieved test accuracy of 80% after being trained on compact dataset of 320 facial images. Self-Supervised Pre-trained MLCN architecture achieved a test accuracy of 88.8% on same dataset

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

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

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**