Nikunj Lad

nikunjrlad@gmail.com | 857.999.6620 | **https://nikunjlad.dev**

EDUCATION

NORTHEASTERN UNIVERSITY — Expected August 2020
Master of Science in Information Systems, **GPA: 3.77**
Coursework: *Machine Learning, Big-Data Intelligence & Analytics, Data Structures & Algorithms, Parallel Computing*

K. J. SOMAIYA COLLEGE OF ENGINEERING — Jun 2012 - May 2016
Bachelor of Engineering in Electronics and Telecommunications Engineering

SKILLS

Languages: Python, NumPy, MATLAB, C++, BASH, Markdown
Frameworks & APIs: OpenCV, PyTorch, Keras, Scikit-Learn, XGBoost, Discovery HPC, SLURM, SpaCy, NLTK
SDLC | VCS | Cloud: Agile, Waterfall, Iterative, Git (Bitbucket, GitHub), CircleCI, Docker, Google Cloud, Amazon AWS

EXPERIENCE

UII AMERICA INC. | Computer Vision Research Intern — Sep 2019 – Jan 2020
- Improved multi-threaded real-time inference pipeline by **50%** on Nvidia P5000 GPU enabled Docker using DensePose correspondence estimation and accomplished a stream rate of **20 to 21 FPS**
- Worked on skeletal tracking in human body by utilizing Astra Pro Depth camera and annotated RGBD images in C++ for obtaining end-to-end mesh recovery of human body on NVidia RTX 2080 GPU

NORTHEASTERN UNIVERSITY | Graduate Teaching & Research Assistant — Jan 2019 – Apr 2020
- Graded assignments, constructed Hackerrank quizzes and helped students with Machine Learning and Python queries
- Conducted Python and Deep Learning workshops for a batch of **100 - 150** students and mentored them
- Developed auto-modeling solutions using H2O for analyzing any data provided into the system

INVIDEO | Software Engineer — Sep 2017 – May 2018
- Scaled up video production rate for clients from **30 videos/day** to **300 videos/day** using Python and OpenCV
- Improved software efficiency by **10%** while reducing video rendering time by **10 mins/video** by incorporating face detection using Convolutional Neural Networks for automated text positioning using AWS EC2 R3X-Large instances
- Parsed new articles for understanding language semantics using Spacy and NLTK for text-to-video translation

K. J. SOMAIYA COLLEGE OF ENGINEERING | Research Assistant — Apr 2017 – Aug 2017
- Proposed a feature extraction method named I-Vectors for better classification of speech disorder signals in MATLAB and improved classification accuracy of algorithm by **6%**
- Formulated a Gaussian Mixture Model (GMM) based Universal Background Model (UBM) for speaker identification and voice analysis thereby yielding **98%** accuracy with proposed technique

PROJECTS

GENDER AND FACE PREDICTION FROM FACE IMAGES *(PyTorch, Python, OpenCV)* — Mar 2020 – May 2020
- Developed multi-threaded pipeline for real-time webcam stream based Age and Gender inference using OpenCV
- Trained custom models with Local Response Normalization using Parallel Computing on Google Cloud Tesla T4 GPU's

AMERICAN SIGN LANGUAGE (ASL) DETECTION *(OpenCV, PyTorch, Python)* — Feb 2020 – Apr 2020
- Extracted features using Sobel, Gabor and Watershed filters and classified images using VGG-16 and VGG-19 models
- Observed multi-GPU performance of model training on Discovery High-Performance Computing platform

TEXT-TO-IMAGE METAMORPHOSIS USING ATTNGANS *(PyTorch, Python, NumPy)* — Dec 2019 – Feb 2020
- Bidirectional LSTM based attention model for attending most important language semantics given a text description
- Executed Conditional GAN architecture with Kullback-Leibler divergence loss to generate specific bird images

MOUSE BRAIN MRI IMAGE CLASSIFICATION WITH DATA PARALLELISM *(Keras, Python, OpenCV)* — Jul 2019 – Sep 2019
- Performed distributed data acquisition and auto stitched images to obtain high resolution training dataset
- Used ResNet-50, Inception-ResNet and ResNeXt-50 with Data parallelism for classifying 3D MRI brain views

LEAF IDENTIFICATION USING HARLICK TEXTURE ANALYSIS *(Tensorflow, Python, NumPy, OpenCV)* — Jan 2019 – Apr 2019
- Using Gray-Level Co-occurrence (GLCM) based Harlick Texture Analysis for extracting leaf texture characteristics
- Used GoogleNet and Inception modules for classification on Amazon EC2 instances with auto-scaling

KING COUNTY HOUSING PRICE PREDICTION *(XGBoost, Scikit-Learn, Python, Pandas)* — Oct 2018 – Dec 2018
- Analyzed data using significance tests and VIF analysis and observed multicollinearity and correlation among variables
- Observed effects of predictions using Generalized Linear Models, Gradient Boosting Machines and Random Forests

PUBLICATIONS

Nikunj R. Lad, J. H. Nirmal, Kshipra D. Naikare. **Total variability factor analysis for dysphonia detection**. *International Journal of Information Technology - Springer*. 2019, Vol. 11, Issue 1, pp 67–74 *(Won Best Paper Award)*