Mandar Deshpande

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EDUCATIONAL QUALIFICATIONS

Bachelor of Technology in Electrical and Electronics **CGPA – 8.73/10** (2013 - 2017)
Visvesvaraya National Institute of Technology, Nagpur, India

High Secondary School Certificate (12th) **CBSE Board** **95%** (2012 - 2013)
Narayana Vidyalayam, Nagpur, India

Secondary School Certificate (10th) **CBSE Board** **94.8%** (2010 - 2011)
Narayana Vidyalayam, Nagpur, India

RELEVANT COURSE WORK

Undergraduate Courses
Integral Transform and PDE, MATLAB Programming, Signals and Systems, Control Systems I & II, Signal Processing
Online Courses
Machine Learning, Deep Learning, Neural Networks, Data Structures and Algorithms, Image and Video Processing

EXPERIENCE

Technology Analyst (July 2017 – ongoing)
Citicorp Services India Limited, Pune

- Working in the Commercial Cards business, to develop and maintain web-services
- Development primarily consists of Java 8, Spring 4 and SQL database
- Performing integration testing and re-engineering to Java 8

Google Summer of Code (May – Aug 2017)
Scilab Enterprise

- Researched possible technologies to enable Scilab users to connect to existing Jupyter servers where Python kernels would be available, which would then allow usage of machine learning frameworks
- Worked alongside Scilab and ESI Group developers to develop a POC for the Jupyter Kernel Integration within Scilab for machine learning, using Python libraries.
- Tested the functionality through scikit-learn and keras (tensorflow backend) libraries.

Summer Internship (May – July 2016)
Citicorp Services India Limited, Pune

- Worked as a Software Analyst in Cash Management under the Treasury and Trade Solutions umbrella
- Actively worked with the Global Concentration Engine (GCE) team to develop Report Configuration Utility
- Also assisted in the redesigning the Global Concentration Engine's functionality

Summer Internship – Project Trainee (June – July 2015)
Mahindra Research Valley, Chennai

- Research microcontroller based smart devices for modular automobile attachments
- Worked alongside the Concept Development Centre(CDC) team
- Successfully developed prototype for 'Auto Plough Lamp' concept

Android App Developer
Rentarctica, Nagpur (May - Nov 2015)

- Developed the UI and functionality for the Android application using Android Studio
- Rentarctica pivoted to vehicle rentals business Twhello in 2015

ACADEMIC PROJECTS AND TECHNICAL PAPERS

Pixel-wise Image Prediction using Convolutional Neural Networks (Sept 2017 – ongoing)

- Collaborating with PhD scholar at Image and Video Processing Lab at Northwestern University to develop Pixel-wise prediction model for image completion
- Convolutional neural networks with residual connections designed using Keras with TensorFlow backend
- Researching technical papers to understand previous work done in PixelRNN (Google)

Neural Style Transfer using TensorFlow and Keras

- Independent implementation of *Neural Algorithm for Artistic Style research paper by Gatys and Bethge*
- Extended to encompass Deep Dream and style net to produce infinite generative fractals
- Used Inception V2 for transfer learning on AWS EC2 instance, for extracting weight representations

Object Detection and Localization using Deep Learning

- Compared results of simple CNN with modern implementations like Region-based CNN, Faster RCNN
- Implementation of CNN based object detection models using Keras and PyTorch, on ImageNet
- Ongoing implementation of YOLO algorithm for real-time object localization

Depression Detection using Sentiment Analysis

- Mined Twitter data using Tweepy to extract and tag Tweets as negative or neutral
- Utilized NLP techniques to classify user as depressed using k-means clustering and Naïve-Bayes classifier
- Technical Paper accepted at *IEEE International Conference on Intelligent Sustainable Systems (ICISS 2017)*

Meta-heuristic Algorithms for Fault Location Estimation and MPP Tracking

- Researched nature based algorithms like Genetic Algorithm (GA), Crow Search Algorithm (CSA) and Artificial Bee Colony (CSA) using MATLAB. *Ongoing work for publication*
- Use of CSA and ABC for estimation of fault location on transmission lines with error below 4%
- Use of CSA for Maximum Power Point Tracking of Solar PV module using Simulink achieving efficiency of 90%

Hand-written Digit Recognition using Neural Networks

- Developed a neural network model using Stochastic gradient descent and back-propagation algorithm; trained and tested on MNIST dataset (MATLAB and python)
- Redesigned the model using scikit-learn and Tensorflow library to compare changes in accuracy and speed of computation

Data Extraction and Report Configuration Utility

- Configuration and data acquisition platform for onboarding of new reports and modification of existing reports
- Developed a JAVA based web Application using Tomcat 7.0, Eclipse IDE and Oracle SQL developer
- Application coded using JAVA SE (JDBC & JSP), HTML, CSS, JavaScript and SQL queries

EXTRA CURRICULAR ACTIVITIES

- Technical Secretory, Electrical And Electronics Engineering, VNIT Nagpur 2014 - 2015
- Student Mentor (Student Mentorship Program, VNIT Nagpur) 2015 - 2016
- Student Mentor Coordinator (Student Mentorship Program, VNIT Nagpur) 2016 - 2017
- Machine learning Blog https://mandroid6.github.io/
- Personal Blog http://www.mandardeshpande1995.blogspot.in

ACHIEVEMENTS AND HONOURS

- Achieved 3rd position at Tata Consultancy Services IT Wiz- Nagpur (2012)
- Selected as a Student Ambassador among 40 students from all over India to attended a seminar at the Singapore campus of SP Jain School of Global Management (2016)
- Awarded top 1% Merit Certificate and Scholarship for 12th CBSE Board Examination (2013)
- Received Amul Vidya Bhushan Award for exceptional performance in CBSE 12th Board Examination (2013)

ONLINE COURSE CERTIFICATIONS

- **Creative Applications of Deep Learning – I** by Parag Mital on Coursera
- **Neural Networks for Machine Learning** by Prof Geoffrey Hinton on Coursera
- **Deep Learning Specialization** by DeepLearning.ai on Coursera
- **Image and Video Processing** by Prof Aggelos Katsaggelos on Coursera
- **Machine Learning** by Stanford University (Prof Andrew Ng) on Coursera
- **Computer Vision A-Z™** on Udemy