Animesh Anant Sharma

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EDUCATION

Columbia University — New York, NY
M.S. in Computer Science (Machine Learning Track) — Expected Dec 2018

Indian Institute of Technology Roorkee — Roorkee, India
B.Tech. in Electrical Engineering, GPA 8.54/10.0 — Jul 2013 – May 2017
- Relevant Courses: Artificial Neural Networks, Machine Learning

SKILLS

Programming Languages: Python, C++, C, MATLAB, SQL,HTML, CSS, VHDL.

Tools and Technologies: GNU/Linux (Ubuntu), Torch, Tensorflow, OpenCV, dlib, Git, MySQL, LATEX, Eagle, NI LabView.

PROFESSIONAL EXPERIENCE

Samsung Research Institute Bangalore — Bangalore, India
Research Intern — May 2016 – Jul 2016
- The goal was to predict call drops efficiently and effectively; approach of the adaptive filter was incorporated in online BPTT and coding was done on MATLAB.
- This technique,which is used in signal processing, changes the transfer function with error feedback as and when the complete information is available; NMSE error was -42.23 dB for the final architecture.

Indian Institute of Technology Kanpur — Kanpur, India
Research Intern — Jun 2015 – Jul 2015
- Started with the basics of machine learning and then the internship involved learning and application of different algorithms like linear regression, logistic regression, neural networks and support vector machines.
- These were tested on datasets involving recognition of postal codes, movie ratings and image compression.

PROJECT EXPERIENCE

Electrical Engineering Department, IIT Roorkee — Roorkee, India

Developement and Testing of a face recognition system — Jul 2016 – Apr 2017
- The attendance system of a classroom was automated using the developed system; the simple technique of eigenfaces was implemented for purpose of learning.
- Face landmark detection was done using dlib and OpenCV was used for preprocessing; CNN was used to get feature vector so that SVM can be used to classify the extracted information; the technique was similar to the one used in OpenFace project and later an application was developed for real time testing in classrooms. **Code**

Univariate very short term and short term forecasting of solar irradiance using modified online backpropagation through time — Jul 2016 – Sep 2016
- The goal was to predict the solar irradiance values for multiple look ahead predictions with time intervals as small as 15 minutes; online form of back propagation through time was implemented on MATLAB.
- The performance of the proposed network was tested comprehensively using two years of data and it outperformed the persistence model and the normal recurrent network; Research paper presented at the 20th IEEE International Computer Science and Engineering Conference (ICSEC), 2016. **Published Paper** and **Code**

Time-series prediction of rainfall in rural India with SVM and comparison with MLP — Mar 2016 – Apr 2016
- The time series prediction of rainfall was done using SVM and MLP; conventional models based on various climatic features were also constructed using SVM and MLP.
- Among these four models the conventional model constructed using SVM appears to be the best solution with a mean absolute error of 13.66; the project was implemented using MATLAB and LIBSVM. **Code**

Ball Balancing Platform Using PID control — Feb 2016 – Apr 2016
- The objective was to balance a ball on a plane surface (plate) and to track the ball through vision cameras to give feedback of position; Real Time tracking of ball was achieved by Template Matching and selecting the ROI.
- The motion involving 2 degrees of freedom of plate was achieved by controlling 2 Servo motors using PID controller and Arduino UNO as microcontroller.

ADDITIONAL EXPERIENCE

Teaching Assistant: Artificial Neural Networks, IIT Roorkee, Spring 2017.