Harshavardhan Unnibhavi

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Education

Indian Institute of Technology Dhanbad,Jharkhand,India *July 2015 - present*
B.Tech in Electronics and Communication Engineering, Minor in Computer Science
Current GPA:8.38/10.00

National Public School,Rajajinagar,Bengaluru *July 2013 - March 2015*
12th CBSE board
Total Percentage:95%

Navkis Educational Centre,Bengaluru *July 2003 - March 2013*
10th CBSE board
CGPA - 9.8

Research Interests

- Deep Learning
- Computer Vision
- Natural Language Processing
- Robotics

Academic Projects

- **End-To-End Text to Speech Model** *September 2017- Present*
  - Design and Implementation of a Text to Speech model in PyTorch using Deep Learning
- **Study of Properties of Wavelet transformed image and it's implementation** *January 2017- April 2017*
  - Implemented wavelet transform for images in MATLAB
  - Studied the EZW algorithm for image compression
- **Study of optical waveguides and optical interconnects for high performance computing** *August 2016 - November 2016*
  - Studied about Silicon wire and rib waveguides for electronic and photonic convergence and various methods to reduce power loss during transmission of the electromagnetic wave through the waveguide.

Self Projects

- **Cats Vs Dogs** *August 2017*
  - Created a 6 layer Convolutional Neural Network in Tensorflow.
  - Each layer consists of a Convolution, Non-Linearity and Max Pooling.
  - This network was trained on the Cats Vs Dogs dataset found on Kaggle.
  - Achieved an accuracy of 87.5% on the test set and 74.6% on the validation set.
  - The project can be found at this link.

- **Sentiment Analysis on Rotten Tomatoes dataset** *April 2017- May 2017*
  - Converted the training and test dataset into word2vec representation.
  - Applied KMeans clustering to find semantically related clusters.
  - Trained a random forest classifier to produce the predictions.
  - The project can be found at this link.

- **Robot controlled by an AVR ATMega8 Microcontroller** *October 2015*
  - Built a Line follower,Edge and Wall Avoider bot
  - Built a GSM controlled bot using Dual Tone Multiple Frequency(DTMF) signalling

Technical Skills

Programming languages	C,Python,Java,C++
Software Skills	MATLAB,RSoft,AVR Studio,OpenCV
Tools	Git,LaTeX
Operating Systems	Windows,Linux
Libraries	TensorFlow,scikit-learn,numpy
Hardware Skills	Arduino, AVR ATMega8, 8085, TMS320C31 DSK, 31 DSK

Relevant Courses

- Network Theory and Filter Design,Digital Circuits,Signals and Systems,Digital Signal Processing, Microprocessors
- Data Structures,Algorithm Design and Analysis,Linear Algebra,Multivariable Calculus,Vector Calculus,Numerical and Statistical methods
- Machine Learning(by Andrew Ng,Coursera),cs231n(Fei Fei Li and Andrej Karpathy)

Selected Achievements

- Was selected for the KVPY scholarship program from about 150,000 students, conducted by the Indian Institute of Science, Bangalore and the Department of Science and Technology, Government of India. I was declared among the top 1% after a rigorous examination and an interview.(Since 2015)
- I was among the top 1000, selected from a pool of 500,000 students all over the country after clearing the National Talent Search Examination, which is a national-level scholarship program in India.(Since 2013)

Languages known English(Proficient),Kannada,Hindi