Suraj Pai

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Education

May 2016   **B.Tech in Electronics and Communications**, *Manipal Institute of Technology*, GPA: 8.43, *Manipal.*

Experience

June 2016 – December 2016   **Innovator / Python Developer**, *Digital Impact Square*, Nashik, Maharashtra.
- Pioneered field research at a school for hearing impaired students and helped develop technology to be used as a teaching aid for sign language which would reduce teaching time.
- Worked with the Technical Team to develop automation scripts in Python to extract data from YouTube videos, process subtitles and run NLP on the text data. Also used speech processing libraries to obtain individual word timings. (Python libraries used: youtube-dl,pysrt,TextBlob,SpeechProcessing)
- As a part of the executive team, met various stakeholders, government officials and private institutions to gain insights from them and improve the product. Discussed with a panel of special educators on what role technology could play in improving lives of the hearing disabled.

January 2016 – May 2016   **Research Intern**, *MIT Practice School*, Manipal, Karnataka.
- Developed and tested various optimization algorithms for Supervised Learning (Mainly MLP, SVMs, Binary MLP, Statistical Classification etc.) to train a Sign Language Classification system. Insights and AUC ROC plots were plotted comparatively offering a clear cut visualization into each algorithms performance
- Collaborated with a team of 3 members to optimize code and develop a final working prototype using the Microsoft Kinect and software APIs to classify 3 gestures in real time. (Software used: MATLAB and Kinect Runtime Libraries). My role centered around data cleaning and visualizations along with optimizations.
- The project, presented to a panel of subject experts and researchers, obtained an A+ project rating.

2016 – Present   **Participant**, *Stanford Crowd Course Initiative.*
- Stanford Crowd Course is an initiative spearheaded by Prof. Sharad Goel, Prof. Amin Saberi and Dr. Rajan Vaish. It facilitates people to collaborate and share their knowledge with others by creating courses on diverse topics.
- As a part of this initiative, I contributed content mainly to the course, " Practical Machine Learning with Python" and received #21 Thank yous. (Thank yous are a way of measuring contributions made to the course in scale.) I also helped translate " Introduction to Python" to Hindi aimed to target the Indian audience.

June 2015 – August 2015   **Embedded System Developer**, *Go-E-Code Technologies*, Bangalore, Karnataka.
- My responsibilities as a developer: Developed IoT applications on 8051 and ARM based boards primarily for Sensor and Timer based projects

Skills

Programming Languages	Javascript, Python
Machine Learning	Keras, NLTK, Scikit Learn, Seaborn, Tableau, Pandas
Adobe Suite	Photoshop, Illustrator

Projects

Facebook Messenger Bot Development, *Django, NLU* .
- Black Adam Bot: Messenger bot to recognize Music and provide information and similar music and artists (Similar to Shazam). Built from scratch using, Django, GraphAPI, ACRCloud API; Link : https://www.messenger.com/t/408061186191970
- First Aid Bot: Messenger bot to provide daily information about first aid procedures and provide targeted information as well. A comprehensive app for basic first aid knowledge. Powered by Red Cross UK. Built using, Django, GraphAPI, Celery, Wit.ai; Link: https://www.messenger.com/t/1246059572141324 (WIP)
- Discover Bot: Messenger bot that helps you discover new places based on local reviews and ratings

Tinnitus Project.
Developed a tunable multi frequency cancellation device using Phase shifters. Tested various simulations and lab tested the final design to achieve optimal cancellation

k-NN based analysis of different pigmenations in skin images, *MATLAB*.
Used k-nn to allow a doctor to pick out different ROI in a skin image to provide prognosis for acne treatment etc. based on comparative image analysis

Airplane Crash Data Visualization, *Python, Pandas, Tableau*.
Represented crash causes, airline companies associated and time domain analysis of airplane crashes since the beginning of time.
https://medium.com/@surajballambat/the-limitless-skies-1bbf83f4457b

Question and Answer Bot, *Word2Vec, Keras*.
QA bot was built using distributed bag of words and deep Neural Networks. Predicted answers for test questions with a 80% accuracy. (Built for Hyphen AI Challenge)

SimPol: US elections predictor, *Python, Pandas, Sklearn*.
Takes your stand on about 20 issues. (From Strongly Disagree, Disagree, Neutral, to strongly Agree) and predicts your chances of winning the US Election based on 2004 and 2008 elections.

Awards

MIT's Innovation Day Prize 2015, *August 2015*.
A low cost lighting and rain water harvesting system concept and prototype won us the first prize at Innovation Day. This concept would help slum dwellers capitalize on the resources readily available to them at a minimal cost.
Manipal, Karnataka