GAYATHRI RAVICHANDRAN

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EDUCATION

- **University of Southern California** — **Los Angeles, CA**
  Master of Science in Computer Science, GPA: **3.5/4.0** — May 2019
- **Ramaiah Institute of Technology** — **Bangalore, India**
  Bachelor of Engineering in Computer Science and Engineering, GPA**: 3.8/4.0** — June 2017

SKILLS

- **Languages**: Python, C, C++, JAVA
- **Software**: Apache Lucene, TensorFlow, MATLAB, Tesseract, WEKA, OpenCV, Android Studio, Corona SDK, Jenkins
- **Cloud Platforms:** AWS, Azure, Google Cloud Platform
- **Web Technologies**: JavaScript, AngularJS, HTML, PHP, jQuery, CSS, JSON, REST
- **Database**: MySQL, MS SQL, MongoDB
- **Libraries**: NLTK , TextBlob, Pandas, Numpy, Tkinter, BeautifulSoup, Scrapy , Keras

EXPERIENCE

Software Engineering Intern in Research | IBM Research| May 2018-Present

- Implementing an unsupervised language and humour generation system on Python.
- Engineering a real time prediction model on Python to detect subtleties in language using **SpaCY**, **Word2Vec** , IBM Watson **Tone Analyzer** and **ConceptNet**.
- Using **BeautifulSoup** and **Scrapy** for data extraction and scraping from HTML and XML documents.
- Extracting semantic relations from text datasets through the ConceptNet knowledge graph.
- Performing predictive analysis with Logistic Regression, Decision Trees, Random Forests and XGBoost.
- Adapted to version control (**GitHub**), performing code reviews and maintaining the code as it evolves.

Software Engineering Intern | InnovationHub Technologies Pvt Ltd | Jan 2017-June 2017

- Developed an Optical Character Recognition System to process images into textual data with **Tesseract**.
- Performed image segmentation, binarization, thresholding, feature extraction and contour detection in **OpenCV**.
- Integrated **TensorFlow** for image classification which boosted accuracy to **94%**.

Project Intern | SCSK Corporation | Nov 2015- Jan 2016

- Developed a machine learning evaluate to predict SCSK's bank revenues and devised a Go-To-Market Strategy.
- Collaborated with management team to identify segments in the Indian Market to expand SCSK's banking software.

PROJECTS

IBM Research Hackathon Runner Up | SmartRouter

- Scraped live tweets using **TweePY** and added functionalities like road condition detection, crime rate prediction and green area detection to Google Maps. Built a REST API on **IBM Cloud.**
- Visualized and segmented satellite image data to find green areas, integrated it with the routing algorithm and built a simple UI.
- Technologies : Python, BeautifulSoup, OpenCV, JavaScript, Bootstrap, REST API, scikit-learn, Pandas, Numpy.

USC Hackathon – Winner | Network Communication and Policy Generation to Identify Malicious Packets

- Generated 10M rows of real time data with **Wireshark**. Data processing and analysis with Pandas, Numpy and SciPy.
- Developed an Ensemble of 4 Machine Learning Models (k-means clustering, XGBoost, CNNs and Logistic Regression) for policy identification. Mean F1 score of **89%** was obtained on test data with over 650,000 transactions.

ASEE 2016 Mid Atlantic Section Conference, New York | Mining Student Data by Ensemble Classification and Clustering for Profiling and Prediction of Student Academic Performance

- Implemented Ensemble Noise Filtering, Majority Vote and Consensus Vote filtering to identify and eliminate outliers. Published in the ASEE Conference Journal. View paper: Paper
- Designed bootstrap averaged k-means clustering to identify groups of students with similar learning styles.

RECOGNITIONS

- Grace Hopper Scholar , 2016
- **Best Poster Award , IBM Research**
- Corona Game Development Challenge Winner: View on Google Play
- List of Publications: Publications