SWARNALATHA NATARAJAN

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Education

- **University of Colorado Boulder** — Boulder, CO
  Masters in Computer Science; GPA 3.88/4 — Aug. 2019 - May. 2021
- **SSN College of Engineering, Anna University** — Chennai, India
  Bachelor of Engineering in Computer Science and Engineering; GPA 8.5/10 — July. 2015 - May. 2019

Experience

- **Software Engineer, Intern** — Boulder, CO
  Spectra Logic — May. 2020 - Present
  Automated computation of metrics for the entire test framework in Go. Metrics such as test duration, service/deployment creation duration, etc were computed, recorded in BigQuery and visualized. This helped maintaining software quality in the Agile development environment.
- **Software Engineer, Intern** — Chennai, India
  Ajax Media Technology — Nov. 2017 - Dec. 2017
  Word Cloud Generator: Used latest NLP techniques to design and develop a GUI application using NLTK in Python to generate a word cloud from a given e-book.
  Profanity Detector: Designed and developed an application to detect NSFW content in video and audio using Yahoo Open NSFW content and CMU Sphinx.
  Sentiment Analysis: Analyzed over 0.5 million news articles and coherently visualized the findings using Vader with 85% accuracy.

Projects

- **COVID-19 Dashboard:** — Jan. 2020 - May. 2020
  Designed and developed a platform that is a one-stop source for tracking and visualizing COVID numbers world-wide. The application was developed using Express.js, React.js and Google BigQuery, containerized and deployed on a Kubernetes cluster.
- **Movie Hub (Winner, Best Use of Twitter API, T9 Hacks):** — Feb. 2020
  Designed and developed a platform that tells on which streaming platform one can find a particular movie, view IMDb details and display tweets related to the movie. The application was developed using Python, Flask, MongoDB and Jinja.
- **Interpretable Machine Learning for Diabetic Patient Readmission:** — Aug. 2019 - Dec. 2019
  Developed an interpretable Machine Learning model to predict if a diabetes patient is going to be re-hospitalized. The factors leading to potential readmission were identified using LIME and SHAP in Python. An accuracy of 70% was achieved.
- **Analysis of Climate Change and its potential impacts:** — Aug. 2019 - Dec. 2019
  Estimated, visualized and predicted the carbon footprint per country and drought based on Standardized Precipitation Evapotranspiration Index (SPEI). Performed Time series analysis using LSTM and ARIMA, and Mann-Kendall test to check monotonic trend.
- **Multimodal Analysis for logistic planning during disaster:** — Dec. 2018 - Feb. 2019
  Classified tweets as request and offer, and mapped them in order to help the government as well as humanitarian organizations to perform relief operations immediately. Performed real-time multimodal analysis of twitter's text and image data using RNN and CNN respectively. An accuracy of 75% was achieved.

Technical Skills

Programming Languages: Python, Java, Go, C, C++, Matlab, JavaScript, PHP.
Database Management Software: SQL, MongoDB, BigQuery.
Web Technologies: Express.js, React.js, HTML5, CSS3, Flask, Jinja, Java Servlets.
Machine learning Libraries: Scikit-learn, Numpy, Pandas, OpenCV, Keras/Tensorflow, NLTK.
Cloud-based Technologies: Google Cloud Platform, Kubernetes, Docker.
Other Technologies: Scrum/Agile, Jenkins, Git, Jira, Adobe XD, Android SDK.