

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

WORK EXPERIENCE

- **Software Engineer, Intern** Boulder, CO
Spectra Logic May. 2020 - Present
Automated computation of metrics for the entire test framework in Go. Computed and recorded NFR metrics like test duration, service/deployment creation duration in BigQuery. 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: Explored latest NLP techniques to design and develop a GUI application to generate a word cloud from a given e-book. Used NLK in Python to develop the application.
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. Used Express.js, React.js, 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. Used Python, Flask, MongoDB and Jinja to develop the application.
- **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 and 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.