MONISH RAJ RAGHU

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Education

Virginia Tech — Virginia, United States
Master of Science in Computer Science and Applications — Aug 2021 – May 2023 (Expected)
Relevant Coursework: Advanced Machine Learning, Information & Storage retrieval, Computer Vision, Information Visualization

Anna University — Chennai, India
BE in Electronics and Communication Engineering — May, 2018

Experience

Virginia Tech – Graduate Research Assistant, USA — Jan 2022 – Present

- Building an extensible serverless storage system for the serverless edge computing system which eliminates the need for an external storage system for storing the functions' data-objects. The system ensures data locality, customized statefulness of data objects and language-based sandbox executions for functions.

Amazon – Application Engineer — July 2020 – July 2021

- Worked on migrating the Digital Bookstore endpoints from Perl-based Gurupa framework to Spring-based Horizonte framework.
- Developed the infrastructure to integrate Amazon academy to the Amazon's pay-select page
- Owned the complete publication, ingestion and payments workflow for Amazon's digital bookstore
- Developed 'Groot', a service using Java to automate and represent the metrics from Amazon's ticketing dashboard. Visually represented using the Kibana dashboard UI
- Responsible for driving the software risks campaign for my team which resolved more than 3000 risks and vulnerabilities

Ford Motor Company – Software Engineer — December 2018 – July 2020

- Developed a search engine, called SuperG which rates and predicts Ford's suppliers' performance using Spring framework and MSSql.
- Worked on setting up a Machine Learning pipeline for automatically identifying disputes from the evidence files submitted by the suppliers without manually identifying disputes using an analyst
- Built a chatbot and integrated with Ford's rating engine, which helped in automating the customer query process previously done by Ford's analysts, thereby saving 250 human-hours per month

Technical Skills

- **Programming and scripting languages:** Java, Python, C/C++, HTML, CSS, JavaScript, Shell scripting
- **Storage:** MSSql, MySQL, Redis, S3, Redshift
- **Machine Learning Frameworks:** TensorFlow, Keras, Pytorch
- **Frameworks:** Spring, Struts
- **Version Control:** Git, Accurev
- **Familiar with:** ETL, SQL, MapReduce, Hadoop, REST, AWS, Tableau, D3.js, Jira, Linux, scikit-learn, JUnit

Academic Projects:

Social Distance Detector — 2021

- Built a Social distance detector that automatically identifies social distance violations based on a video from a monocular camera. Used perspective projection to obtain the Bird's eye view of the population and calculated the distances based on the centroid from the bounding boxes provided by the object detection YOLO v3

Multi-modal search engine — 2021

- Developed a search engine application, which uses Okapi BM25 model to rank the documents based on the query statement. Created the backend API running on the BM25 model using Flask and integrated to the frontend UI built on react

Automatic segmentation and classification of retinal fluids in OCT images using Computer vision — 2018

- Created a neural network model for faster identification and segmentation of retinal fluids in Keras (Python) using a U-net CNN(Convolutional Neural Network) and classified using random forest classifier

Awards and Accolades

Asia Pacific Recognition award (Ford Motor Company): — 2020

- Awarded Asia Pacific Recognition award under the 'innovation' category by Ford motor company for the successful development and implementation of the chatbot which helps to automate the suppliers' querying process