PAVAN KALYAN REDDY THOTA

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EDUCATION

Master of Science, Computer Science	**Graduating: Dec 2021**
Arizona State University, Tempe, Arizona	**GPA: 4/4**
Bachelor of Technology, Computer Science and Engineering	**May 2019**
Sreenidhi Institute of Science and Technology, Hyderabad, India	**GPA: 9.33/10**

TECHNICAL SKILLS

Programming Languages: Java, Python, C, C++,   **Web Technologies**: HTML, CSS, JavaScript, PHP, Bootstrap, JSP
Databases: MySQL, MongoDB, PostgreSQL   **Frameworks**: Spring, Hibernate, React JS, Flask, D3.js, Hadoop, Apache Spark, REST API's
Tools: Azure DevOps, Azure CLI, Terraform, Jenkins, Azure, Git, Android Studio, AWS (EC2, S3, SQS), Google App Engine
Coursework: Distributed Databases, Cloud Computing, Algorithm Analysis and Design, Operating Systems, Data Mining, Machine Learning

WORK EXPERIENCE

Starbucks, Scottsdale, Arizona: Platform Engineer Intern   **May 2021 - Present**

- Refactored existing Azure provision's **Jenkins** pipelines from **Azure CLI** to **Terraform** and **Azure REST API** to solve parallel execution and Race condition problems. Worked on Key Vault and Virtual Machine provision pipelines. Designed a model for refactoring all the pipelines and improving the efficiency of the pipelines.
- Implemented Azure **Key Vault Terraform** Configuration, Key Vault **Provision** and Key Vault **Deprovision** in Azure DevOps pipeline from scratch using Terraform tasks, Python and YAML scripts and leveraging **Azure SPN, Azure Key Vaults, Azure Storage Accounts** and **Storage Containers**. Improved the efficiency of pipelines by decreasing the build time by 30 seconds.
- Created templates for migrating existing Azure resource provision's **Jenkins pipelines to Azure DevOps pipelines**. Made a design and proof of concept for Jenkins to Azure DevOps migration.

Path creators Pvt Ltd, Hyderabad, India: Web Developer Intern   **Mar 2019 - May 2019**

- Developed a Web application for warehouses and distribution centres that aims to minimize the distance travelled between them using Graph Algorithms (Traveling Salesman Problem) and Google Map API's. Improved the efficiency of existing algorithm by 20%.
- Updated existing Inventory Management System to maintain the stock and implemented an algorithm to notify the user for the availability of stock in the closest vicinity. Worked on backend development using **Flask** web Framework and **MySQL**.

Digi Delight Pvt Ltd, Hyderabad, India: Software Developer Intern   **Mar 2018 - Jul 2018**

- Developed **Spring boot** application to provide REST endpoints for CRUD operations on **MongoDB** database for user statistics based on bank transactions in JSON format.
- Accepts user's transaction messages via **REST** call to create and update user spending habits by extracting transaction details and classifying the transactions into categories. Deployed the application into AWS EC2 instance processing about 10000 transactions a day.
- Involved in building the Android Application for displaying the statistics of user expenses.

ACADEMIC PROJECTS

AWS Cloud Application - Image Recognition as a Service   *Node.js, EC2, SQS, S3, Bash*

- Developed Web Application - IaaS model of cloud service that provides image classification as a service using AWS cloud resources.
- Developed this application using a multi-tier architecture with a single web tier and auto-scaling app tier based on input requests traffic in the SQS queue and used S3 Buckets to maintain persistency.
- Implemented a load balancer and controller to ensure the elasticity of the application automatically by scaling out and in on demand.

GCP Cloud Application – Food and Restaurant's Sentiment Analysis   *Python, React Native, Node Js, Auto ML, Mongo DB*

- Developed React native application to score food and restaurants present within the user's range based on sentiment of reviews fetched from YELP API. Cached the reviews on Mongo DB to restrict the API limit.
- Created a Name Entity Recognizer for food reviews to identify dishes, name and place using Google Auto ML and analysed its sentiment using Google's NLP sentiment analysis. Pre-processed the data and scored the reviews using python.
- Developed REST API in Nodejs that takes the user location as input and responses the food and restaurant and food scores which is deployed on Google App Engine.

Distributed Mobile Offloading   *Android Studio, Java, Bluetooth Socket and Services*

- Developed Master- Slave Android application framework that simulates the distributed computation on mobile phones.
- Worked on sending payloads from Master and Slaves using Bluetooth services and integrating the results from slave nodes.
- Provided an n*n matrix multiplication service through this distributed architecture which offloads the task of multiplying intermediate sub matrices on to the slave mobile phones.
- Tested the computational performances using both distributed and non-distributed approaches and implemented failure recovery.

Hotspot analysis of Geospatial data   *Spark, Scala, EC2, HDFS, MongoDB*

- Performed hot zone and hot cell analysis on large-scale spatial data using Spark to identify and rank the top 30 hot zones.
- Analysed New York's taxi data set to recognize high pick-up probability areas within New York and drivers can increase their pick-up rate by 45% by abiding to the recommendations from the analysis.
- Performed textual and spatial search using MongoDB to find all the businesses present in a particular city and to find business names present in the maximum distance from the given location that covers all requested categories.

Vast Mini Challenge – Characterization of Pandemic Spread   *D3.js, JavaScript, HTML, CSS, Python, Flask*

- Developed a Web Application showing characterization of pandemic spread using Data Visualizations.
- Pre-processed 10 GB of patient's data in python and derived the patterns in Symptoms using Apriori Principle and Classification Algorithms to predict the death span of a patient. Used Flask Framework for backend and D3.js, JavaScript, HTML, CSS for frontend.
- Implemented user interactive visualizations to show the anomalies in the pandemic spread and observe the symptom patterns.

American Sign Language Gesture Recognition   *JAVA, Android, Python, Scikit-learn, POSENET*

- Developed an Android application to record sets of 12 ASL gestures to create a huge dataset required for the gesture recognition task.
- Extracted Frame-Points of human body from videos using POSNET API. Performed feature extraction and trained the model on KNN (Accuracy: 86%), MLP (Accuracy: 81%) and SVM (Accuracy: 70%)
- Created a REST API and deployed the Application on Heroku that requests the gesture key points and predicts the gesture performed.

LEADERSHIP EXPERIENCE

- Working as Teaching Assistant for the course CSE 110 - Principles of Programming Languages through JAVA
- Worked as Graduate Service Assistant for the course CSE 240 - Intro to Programming Languages.