DIVYA PATTISAPU

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SUMMARY

Experienced Engineer from IIT Bombay and the University of Chicago, with a versatile skillset across frontend, backend, machine learning & infrastructure

EDUCATION

The University of Chicago *Chicago, IL*
Master's Program in Computer Science - GPA: 3.8/4.0 *Mar 2024*
Coursework: Cloud Computing, Machine Learning, Distributed Systems, High Performance Computing

Indian Institute of Technology, Bombay *Mumbai, India*
Bachelor and Master of Technology in Mechanical Engineering - GPA: 8.7/10.0 *Aug 2021*
Teaching Assistant - Engineering Data Mining & Applications: Instructed 200+ students, Designed & evaluated their assignments

SKILLS

Languages	: Python, SQL, C (CUDA, OpenMP, MPI), C++, Go
Cloud Services	: Amazon Web Services (EC2, S3, Glacier, SQS, SNS, ELB, Lambda - Serverless, CloudFormation, DynamoDB)
Data Frameworks	: Apache Spark, Hadoop/HDFS, Apache Hive, Databricks
Web development tools	: React.js, Node.js, Next.js, HTML, CSS, JavaScript, FastAPI, Flask, Bootstrap, MQTT, RabbitMQ, Pytest
Machine Learning Models	: Classification, Clustering, Computer Vision, Natural Language Processing

EXPERIENCE

Arvist *Chicago, IL*
Machine Learning Intern *May 2024 - Present*
- Deploying ML models (object detection, pose, depth, etc.) to edge devices on Docker using OpenVINO
- Designed and implemented a new backend feature for detecting truck entry and exit detection on Nodejs integrating internal & third party APIs like Chooch and GPT
- Enhanced the performance of the forklift collision detection algorithm by fitting linear regression models to optimize filter thresholds
- Boosted the mean average precision of the object detection model from 98.3% to 99.5% by balancing the dataset using augmentation techniques
- Implemented and deployed a hierarchical tracking algorithm to handle mislabeled object detections by persisting relevant information
- Gained expertise implementing systems using event driven, model driven and micro-services architecture

University of Chicago Professional Education *Chicago, IL*
Data Engineering Intern *Feb 2023 - Mar 2024*
- Developed KModes model to create target segments with observed student admission decline patterns for retention campaigns by performing segmentation models; Used these outcomes to identify key contributors for decline in each segment using Decision Tree Classifiers
- Developed an in-house pipeline for campaign reports using LinkedIn Ads API saving dollar cost
- Created an ETL pipeline for student grades, enrollment and admission, leveraging dbt, Trino and MS SQL Server

MasterCard *New Delhi, India*
Associate Consultant *Jul 2021 - Jul 2022*
- Oversaw and maintained the production level code of the marketing team's flagship product for 4 international markets
- Developed a PySpark application to carry out correlation analysis between audience segments to identify cross-selling opportunities
- Built automated data validation and quality check pipelines for continuously observing and validating production runs
- Developed a customer segmentation model using KMeans model to fuel the strategic debit portfolio enhancements and targeted campaigns
- Created automated pipelines for competitor analysis & market research for campaign targeting

PROJECTS

Genomics Annotation Service – AWS Cloud Computing
- Developed a SaaS application for file upload, processing and retrieval with job status view and free/premium user file storage features
- Implemented a tiered storage serverless archival process to transfer free users' result files from S3 to Glacier to reduce the storage cost incurred
- Integrated the application with a Stripe payment system and included a notification system to inform the users of their job completion

Microservices-Powered Auction Website
- Designed and developed a full-stack auction website using FastAPI, React.js, Postgres, RabbitMQ & Docker
- Integrated the microservices using an API layer, and ensured robust integration via API testing

Parallel Image Processing Package using GoLang
- Designed and implemented a versatile image processing package in Golang, with a command-line interface to input images
- Implemented a map-reduce algorithm for parallel image processing and a partitioning mechanism based on a specified attribute
- Integrated a work-stealing algorithm to opportunistically steal work from busy threads, improving the speedup by 10%

Distributed Messaging Queue
- Implemented an object-oriented distributed message queueing system like RabbitMQ using Flask with quorum-based consensus for replication
- Conducted rigorous testing to validate fault-tolerance mechanisms, ensuring 100% code coverage at each development iteration

Analyzing Customer Behavior towards Electric Vehicles (publication)
- Curated a 35-feature survey dataset, applying a variety of classifiers including Logistic Regression, LDA, Naïve Bayes and Deep Learning
- Achieved 72% accuracy using Logistic Classifier and analyzed the contributing factors using Shapley Value & Relative Weight Analysis