DIVYA PATTISAPU

divyapattisapu.vercel.app | divyapattisapu@gmail.com | +1 773-219-4003 | linkedin.com/in/divyapattisapu

SUMMARY

Experienced Engineer from IIT Bombay and University of Chicago with a specialization in Application Development, Cloud Computing and ML

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, High Performance Computing, Advanced Computer Architecture, Distributed Systems

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

Programming	: Python, C/C++, JavaScript, Go, SQL
Full-Stack Development	: React.js, Node.js, Next.js, FastAPI, Flask
Cloud Services	: Amazon Web Services (EC2, S3, Glacier, SQS, SNS, ELB, Lambda - Serverless, CloudFormation, DynamoDB)
Data Frameworks	: Apache Spark, Hadoop/HDFS, Apache Hive

EXPERIENCE

Arvist *Chicago, IL*
Machine Learning Engineer *Sept 2024 - Jan 2025*
- Designed and implemented a single-threaded async event-driven architecture in Node.js, supporting MQTT, Postgres, HTTP, and file storage, with user-defined modules for safety risk detection in warehouses using GPT prompts
- Developed Python-based microservices for pose detection metrics computation, and for scheduling report generation with database integration
- Implemented back-end features for a truck identification system on Nodejs using event driven, model driven and micro-services architecture

Machine Learning Intern *May - Aug 2024*
- 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

MasterCard *New Delhi, India*
Associate Consultant *Jul 2021 - Jul 2022*
- Implemented and maintained the inference pipeline for forecasting models of the company's advertisement insights product on Spark and Hive
- Programmed data validation and quality check pipelines for continuously observing and validating production runs
- Performed big data analytics to select relevant customer groups for client advertisement campaigns in a customer facing Digital Marketing team
- Built automated pipelines for competitor analysis & market research for campaign targeting
- Developed a PySpark application to carry out correlation analysis between audience segments to identify cross-selling opportunities

University of Chicago Professional Education *Chicago, IL*
Data Engineering Intern *Feb 2023 - Mar 2024*
- Developed an in-house pipeline for campaign reports on LinkedIn Ads and Google Analytics using their APIs saving dollar cost
- Created an ETL pipeline for student grades, enrollment and admission, leveraging dbt, Trino and MS SQL Server
- 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
- Built and automated dashboards on Tableau to present key insights to partners, facilitating data visualization and quantitative analysis
- Identified factors contributing to accepted, denied or declined applications using Decision Tree Classifier and Logistic Classifier models

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 an eBay-modeled auction website in a team of 5 using Agile methodology ensuring robust integration via API testing
- Developed a full-stack solution using React.js, FastAPI, Postgres for relational database modeling, and RabbitMQ for communication

Parallel Image Processing GoLang Package
- Designed and implemented a versatile image processing package, 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

High Performance Computing Projects
- **Ray Tracing using CUDA:** Utilized CUDA to implement the algorithm for rendering the images of 3D objects as seen by an observer through the window, achieving a 40% reduction in rendering time and enhancing GPU performance on Nvidia K80 GPU nodes
- **Deep Learning Using C:** Wrote a shared memory parallelizable OpenMP code with customizable neurons per layer for MNIST dataset