Aditya Kumar

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Education

Indian Institute of Technology, Delhi 7.0 GPA
Bachelor of Technology in Production and Industrial Engineering *2019 - 2023*

PMS Public School 90%
Class XII *2018 - 2019*

Experience

Auro Digital | Execution, Order, and Portfolio Management systems Jun 2023 – Present
Full Stack & DevOps Engineering

- Engineered and maintained a React-based Order Management System (OMS) and Portfolio Management System (PMS) for crypto trading, utilizing real-time data updates, robust security, and scalability.
- Leveraged AWS services including **Amazon EC2**, **RDS**, **S3**, **EBS**, **Lambda**, and **CloudFront** to optimize infrastructure performance, scalability, and cost-efficiency.
- Developed and executed a load testing script in **Bash** and **Golang**, simulating real-world usage scenarios to stress-test the system and ensure its robustness under heavy traffic.
- Utilized **tcpdump** for network packet analysis to diagnose and resolve networking issues, improving application reliability and performance.
- Developed an API health monitoring system with automated Telegram notifications to instantly detect and report any API outages or anomalies, ensuring robust system reliability and timely issue resolution.
- Implemented a robust CI/CD pipeline for automated deployment, enabling the seamless delivery of Git branch builds to an S3 bucket, streamlining platform updates and maintenance processes.

Internships

Performance Modeling of Integrated Architectures | *Prof. Bernhard Egger (SNU, South Korea)* May 2021

- Gained expertise in OpenCL Data Parallel and Execution models, focusing on integrated CPU-GPU architectures and their memory structures.
- Generated Assembly code for Kernels by extracting and disassembling OpenCL kernels to obtain ISA binary for the Integrated GPU.
- Conducted performance profiling of Intel integrated CPU-GPU architecture using custom-designed OpenCL microkernels, and meticulously documented Register Allocation for Intel Processor Graphics.

COASTER PROJECT | *Prof. Ronan Llyons, Economics Dept.* | *Trinity College Dublin* March-May 2021

- Performed advanced data analysis to derive precise estimates of trade activities between Britain and Ireland during their economic union.
- Conducted a thorough assessment of the macroeconomic relationship between Britain and Ireland by digitizing and processing invaluable historical documents containing coastal trade data between the two nations.
- Implemented cutting-edge technology by integrating Tesseract 4, featuring a state-of-the-art neural network (LSTM) based OCR engine with a specialized model for accurate recognition of numeric data, achieving an impressive 99% accuracy rate.

Projects

Algo BackTest | *Python, Redis, Websockets* March 2024

- Architectured a Microservices-Based Trading Platform: Led the design and implementation of a robust microservices architecture for a trading platform, facilitating real-time order processing and trade execution.
- Implemented detailed endpoint functionalities such as POST for order placement, PUT for order modification, DELETE for order cancellation, and GET for fetching order details.
- Established WebSocket services for real-time updates, delivering trade notifications and continuous snapshots of the order book with depth levels to client applications
- Containerized all microservices using Docker, ensuring isolated environments for each service component and employed advanced database management techniques and custom business logic for order and trade processing.

Retinal Fluid Segmentation | *Prof. Souvik Chakraborty (IIT-D)* | *Dept. of Applied Mechanics* 2021

- Utilized 3-D convolutional neural networks to analyze Optical CT images.
- Employed a deep learning-based segmentation algorithm for precise diagnosis and treatment of patients with retinal fluid.
- Achieved outstanding results with the fully implemented 3D convolutional network, boasting a remarkable segmentation accuracy of 99.56%, a Kappa coefficient of 98.47%, and a robust F1 score of 95.50% for retinal fluid.

Positions

Web Executive Oct. 2020 – May 2021

BSW, IIT Delhi

- Developed a CRUD-based portal using React and NodeJS with firebase DB, deployed on Apache server, to refine the application process of ongoing research projects of IIT-D
- Designed and developed multiple static web pages using HTML/CSS.

Technical Skills

Languages: Python, Java, JavaScript, C++, Kotlin

Frameworks: React, Node.js, Flutter, BootStrap, Tailwind CSS, Next.js

Developer Tools: Git, AWS, GCP, Ansible, Docker, Kubernetes, VS Code, Visual Studio, PyCharm

Libraries: pandas, NumPy, Matplotlib