Mohammad Ummair

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Education

- **Indian Institute Of Technology, Bombay** — Mumbai, India
  Master of Technology in Computer Science; CGPA: 8.67 — *Jun. 2021 – Jul. 2023*
- **Government College Of Engineering** — Aurangabad, India
  Bachelor of Engineering in Information Technology — *Jul. 2017 – Mar. 2021*

Experience

- **Apple** — Bangalore, India
  Software Engineer — *Jul. 2023 - Present*
  - **Application Development**: Led the development of new APIs and features for an end to end firmware tool utilized by 100+ firmware, significantly improving operational efficiency and scalability.
  - **Distributed System**: Developed a distributed architecture to efficiently distribute tasks among several nodes, significantly improving parallel processing capabilities and overall system performance.
  - **Database Operations**: Managed database operations, including updates, backups, and performance tuning, to uphold data integrity and ensure reliable system performance.
  - **Performance Monitoring**: Introduced sophisticated performance monitoring techniques, guaranteeing the enduring quality and reliability of test node infrastructure.
  - **Tools Used**: Python3, PostgreSQL, Flask, Socket, Threading
- **Tata Consultancy Services** — Chennai, India
  Project Intern — *Feb. 2021 - May 2021*
  - **Demand Forecasting**: Engineered an application to predict the number of delivery vehicles required for upcoming days using 3+ time series models.
  - **Optimization**: Fine-tuned forecasting parameters to optimize resource allocation and ensure timely deliveries.
  - **Tools Used**: Python3, Numpy, Pytorch, Scikit learn, Matplotlib, Jupyter Notebook
- **TechInvento Services** — Aurangabad, India
  Machine Learning Intern — *May 2019 - Jun. 2019*
  - **Automated Computer Vision Tool**: Developed a computer vision tool to digitize handwritten documents, enhancing data processing efficiency.
  - **Web Application Deployment**: Deployed a web application using Node.js to monitor changes made by the computer vision algorithm, ensuring accurate and up-to-date digitization.
  - **Tools Used**: Python3, NodeJs, Numpy, Pytorch, Scikit learn, Matplotlib, Jupyter Notebook

Projects

- **Key-Value Server Using RPC**: Designed and programmed a multi-threaded server that maintained KV pairs and a KV client that accepted user commands to manipulate KV pairs. Executed commands using RPC and sockets in Go.
- **Bitcoin Simulation**: Designed and implemented a Bitcoin environment simulation. Implemented and tested consensus algorithms like Proof of Work (PoW) within a simulated Bitcoin environment to evaluate security and scalability. Simulated transactions to assess the impact of network changes on transaction speed, fees and overall efficiency.
- **Sharded Key/Value Storage System**: Developed a distributed key/value storage system that shards data across multiple replica groups to improve performance by increasing throughput. Designed a fault-tolerant shard controller responsible for dynamically assigning shards to replica groups based on load and capacity, using a Raft consensus algorithm for configuration changes.
- **Asset Performance Monitoring Application**: Collaborated with a team of 3 to develop an APM with Machine Learning Algorithm integration to optimize the performance of mechanical devices used in industries, ensuring high availability and proactive monitoring of mechanical devices.
- **Solidity+: Detect bugs and vulnerabilities in smart contracts** : Analysed 300+ smart contracts to identify possible vulnerabilities. Designed algorithm to detect possible vulnerabilities and different bugs. Implemented Framework to detect and notify users of the present vulnerability.

Programming Skills

- **Languages**: Python, C, C++, SQL, Node Js., PostgreSQL, Solidity, Go
- **Frameworks, Libraries & misc**: Flask, Scikit Learn, socket, threading, Matplotlib, Pytorch, Numpy, BeautifulSoup, Git, LaTeX, Tensorflow