

Prachal Patel

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OBJECTIVE

To build large scale software systems that can tackle certifiable problems by utilizing the advantages of cloud & distributed systems.

EDUCATION

Master of Science in Software Engineering San Jose State University (3.77/4.00) Expected May 2021

Related coursework: Enterprise Distributed Systems, Cloud Technologies, Enterprise Software Platforms, Software Systems Engineering

Bachelor of Engineering in Information Technology Gujarat Technological University (3.90/4.00) August 2015 - May 2019

Related Coursework: Data Structures and Algorithms, Database Management Systems, Web Technologies, Artificial Intelligence

PROFESSIONAL EXPERIENCE

ADX Labs, Minneapolis, USA - Software Engineer Intern (MLOps) December 2020 – Present

- Configuring **on-prem server** infrastructure for **MLaaS** product developed for on-demand remote deep learning model training.
- Working with **Kubernetes** and **Docker** containers on **VMware Tanzu** platform to provide autoscaling and monitoring support.
- Using GitLab to create automated CI/CD pipelines to achieve **zero downtime** for the model deployments with high performance.

San Jose State University, USA - Graduate Teaching Assistant August 2020 – December 2020

- Responsible for taking sessions on Software Quality Assurance, Network & Information security, and Python programming.
- Helped professors to create assignments, projects, grade them, and ensuring students understood the concepts well.
- Prepared and presented effective demonstrations in order to help **150 students** on their projects and assignments.

Ahmedabad University, India - Computer Vision Intern July 2018 - May 2019

- Achieved 96% accuracy** on real-time person identification that can improve the security of a surveillance system.
- Worked on the problem of **real-time person identification** using the soft biometric attribute gait (walking style of a person).
- Used **TensorFlow** and **semantic segmentation** to extract instances from the video, remove the background, and binarize the input.

Fx Data Labs, India - Software Developer Intern April 2018 - June 2018

- Configured MongoDB replica cluster for distributed application in a private cloud to increase the system **availability** by **20%**.
- Designed and implemented **99.9% up-time** REST API services for an e-commerce application along with an online payment gateway.
- Performed sentiment analysis using NLP & **Python** for restaurants from reviews in order to provide performance insights.

PROJECTS

Glassdoor Prototype (React, Node, MongoDB, MySQL, Kafka, AWS, Docker, Redis) October 2020 – December 2020

- Lead a team of 4 people to design and develop a fully functional, **scalable** prototype of Glassdoor web application.
- Responsible for frontend of the application, developed employer side functionalities in React JS integrated with **Kafka** services.
- Used MongoDB and MySQL for better performance platform and used Redis **caching** to improve the read performance by ~80%.
- Designed the system architecture and the database schema for different models and used Kafka messaging for **high throughput**.

Yelp Restaurant System (React, Node, MySQL, Redux, JMeter, Kafka, AWS) August 2020 – October 2020

- Developed a clone of the Yelp restaurant system with functionalities of yelp using React, Node & AWS cloud for deployment.
- Improved database performance by 25%** by using MySQL connection pooling to enable reuse of multithreaded connections.
- Increased the scalability** of the system by using **Kafka** streaming and deployed the application on AWS EC2 and database on RDS.
- Implemented state management in **Redux**, tested backend in JMeter & Mocha for **10000 concurrent users**, and frontend in **Enzyme**.

BookMyTicket (Golang, Kubernetes, MongoDB, AWS, Docker, GCP) October 2019 - November 2019

- Developed a multi-cloud SaaS application for online movie booking integrated with independent **microservices**.
- Wrote backend RESTful API calls in **Golang** for show management and booking and deployed on the Kubernetes cluster.
- Designed and managed MongoDB sharded cluster for each microservice individually in AWS private VPC to **harness the security**.
- Created frontend components using React and deployed the application on GCP with Kong API gateway as a single point of entry.

Key-Value Pair Replicated Database (Java, Docker, RESTlet, NoSQL) August 2019 - October 2019

- Created a peer to peer NoSQL replicated Key/Value Pair cluster which works as a version control system using Java and RESTlet API.
- Applied **Vector Clocks** as a timestamp in a distributed system that supported Availability and **Partition Tolerance**.
- Configured the cluster to allow the nodes to communicate with each other concurrently using a broadcast mechanism.
- Implemented conflict resolution algorithm to select the winning node which made the system eventually consistent.

ACHIEVEMENTS

- Winner of Ingenious hackathon among 30 teams in a 36-hour long hackathon which focused on AI for computer vision.
- Achieved 85% completion grade in Data Structures & Algorithms course offered by the University of San Diego on Coursera.

TECHNICAL SKILLS AND CERTIFICATIONS

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

Databases: MySQL, MongoDB, Redis Caching

Testing: Mocha, JMeter, JUnit

Cloud: AWS (EC2, ECS, S3, RDS, VPC, Load Balancing, Auto Scaling, API Gateway), Google Cloud Platform, Kong API Gateway

Certifications: Microsoft Technology Associate - Software Development Fundamentals and Database Fundamentals

Technologies: Docker, Kubernetes, Kafka, Postman, GraphQL

Web: React, Node, Redux, RESTful API services, HTML, CSS, Bootstrap

Others: GitHub, Linux/Unix, Object Oriented Design, Scrum