

SOHAM PATEL

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EDUCATION

Arizona State University

August 2023 - Present

Master of Science in Information Technology — GPA: 3.74/4.00

Gujarat Technological University

August 2019 - May 2023

Bachelor of Technology in Information and Communication Technology(ICT) — GPA: 3.48/4.00

SKILLS

Reliability & Monitoring: Observability, System Health Monitoring, Fault Tolerance, Load Balancing, Performance Optimization
Automation & Infrastructure: Kubernetes, Docker, Terraform, CI/CD Pipelines (Jenkins, GitHub Actions), Bash Scripting **Cloud & Distributed Systems:** AWS (EC2, S3, IAM, RDS, Lambda, CloudFormation, CloudFront, DynamoDB, Redshift, Kinesis, Athena, Glue)
Software Development & Debugging: Python, Go, Java, C++, Shell Scripting
Databases & Data Pipelines: MySQL, PostgreSQL, MongoDB, ETL Pipelines, Big Data Processing (Pandas, Apache Spark, Seaborn)
Security & Networking: System Debugging, Performance Tuning, Logging & Alerting, Authentication & Access Control

WORK EXPERIENCE

Software Engineer Intern(AI/ML)

January 2023 - May 2023

Bhaskaracharya Institute for Space Applications and Geo-informatics

- Optimized AI infrastructure reliability by designing a **fault-tolerant AI-based audio classification system** (CNNs, ANNs) using the UrbanSound8K dataset, improving model performance by 25%.
- Reduced GPU compute time by 30% using **CUDA acceleration & optimized memory management** (PyTorch, TensorFlow).
- Built an automated **feature extraction pipeline** (MFCCs, Spectrograms) with **SQL/NoSQL distributed storage**, enhancing system scalability & fault tolerance.

Cyber-Security Intern

May 2022 - July 2022

Bhaskaracharya Institute for Space Applications and Geo-informatics

- Developed a **scalable and secure** audio steganography system using Python & LSB algorithms, embedding watermarks in WAV files for imperceptible data concealment, ensuring enhanced **data confidentiality and security**.
- Integrated **lossless audio encoding & noise reduction algorithms**, improving data resilience & reliability under transmission.
- Designed a secure encryption model with **distributed storage mechanisms**, ensuring zero data loss and improving watermark durability by 30%, enhancing data confidentiality and resilience.

Data Management Assistant

April 2022 - December 2022

AIIE, Career Development Cells

- migrated 10 years of placement records to distributed databases (**MySQL & PostgreSQL**) database for better scalability.
- Orchestrated **ETL pipelines** with proactive monitoring and logging, integrating database sharding and indexing strategies to uphold 99.9% data integrity while accelerating data retrieval by 35% in real-time analytics dashboards (**Power BI, SQL**).
- Boosted reporting accuracy by 25%, streamlined student tracking, and enhanced placement success visualization for strategic decision-making. Designed user-friendly interfaces for tracking and reporting systems.

PROJECTS

Hospital Management System | MERN Stack, Postman, Bootstrap, Docker

Full Stack Developer

- Architected a high-availability hospital management system with role-based dashboards, automated patient scheduling, secure authentication, and streamlined communication for doctors, administrators, and patients.
- Sculpted a scalable MERN Stack framework, integrating Express.js for API orchestration, Postman for validation, and Docker for microservices, while resolving API bottlenecks through optimized routing and rigorous testing to enhance system resilience.
- Delivered a feature-rich system with secure logins, automated reminders, real-time doctor updates, and appointment tracking, improving efficiency by 25%.

Online Exam Portal| React, Node.js, Express.js, PostgreSQL/MongoDB, CI/CD (GitHub Actions), Docker, Jest

Full Stack Developer

- Developed a React and Node.js-based online examination system with JWT authentication, real-time monitoring, and automated grading, ensuring secure and efficient remote assessments.
- Engineered a scalable backend with PostgreSQL and MongoDB, implementing role-based access control and optimized database queries to handle concurrent user sessions seamlessly.
- Deployed the platform using Docker and CI/CD pipelines, integrating unit tests (Jest) and enhancing security measures such as session tracking and IP-based restrictions to prevent exam malpractice.

My E-Commerce Store | Node.js, Express.js, MySQL, EJS, HTML/CSS, JavaScript

Front-End Developer

- Crafted a scalable e-commerce platform leveraging Docker, AWS, and RESTful APIs with Express.js, integrating secure authentication, dynamic product management, and optimized transaction handling through MySQL indexing and caching.
- Augmented system reliability by reducing query execution time by 40% with database optimizations, ensuring low-latency transactions, high availability, and fault tolerance through auto-scaling infrastructure.

CERTIFICATIONS

AZNext Full Stack Development Course

December 2024

Cognizant

- Completed an immersive program that provided hands-on experience with Java, HTML, CSS, JavaScript, SQL, and Microservices.
- The course included practical workshops, interview clinics, and business showcases that enhanced my ability to design scalable web applications and work effectively within agile teams.