

# SOHAM PATEL

Phoenix, AZ | [LinkedIn](#) | [GitHub](#) | [Portfolio](#) | (480)-797-8323 | [psoham028@gmail.com](mailto:psoham028@gmail.com)

## 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, Athena, DynamoDB, Redshift, 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

- Architected a resilient, high-performance audio classification system integrating **convolutional and artificial neural networks (CNNs, ANNs)**, achieving a notable **25% accuracy** enhancement on the UrbanSound8K dataset.
- Accelerated GPU computational throughput by **30% through sophisticated CUDA optimizations**, meticulous memory allocation, and strategic implementation using **PyTorch and TensorFlow**, ensuring consistent real-time processing capabilities.
- Designed a comprehensive, scalable feature extraction pipeline employing **Mel Frequency Cepstral Coefficients (MFCCs)** and Spectrogram analysis, seamlessly integrated with distributed **SQL and NoSQL** storage solutions, markedly improving system robustness and data accessibility.

### 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.

### Chicago Crime Dashboard Implementation | Python, Tableau, SQL

Data Analytics

- Built an interactive dashboard using Tableau and SQL, analyzing 2022 Chicago crime data with advanced filtering for crime type, time, and location, enabling targeted insights for stakeholders.
- Processed over 1M+ records with Python, delivering actionable visualizations to support data-driven strategies for policymakers and law enforcement.

## CERTIFICATIONS

### AWS Academy Cloud Foundations

January 2025

- Hands-on experience with AWS core services including EC2, S3, IAM, RDS, VPC, Lambda, CloudFormation, CloudFront, and DynamoDB. Covered cloud security, architecture, pricing, and computing fundamentals.

### AWS Academy Data Engineering

January 2025

- Practical training in data ingestion, processing, storage, and visualization using AWS Glue, AWS Redshift, AWS S3, AWS Athena, Kinesis, EMR, and QuickSight for analytics and ML applications.