

UTSAV PATEL

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EDUCATION

Bachelor of Technology in Computer Science and Engineering
Nirma University, Ahmedabad, India

July 2019 - May 2023
GPA: 8.01/10

SKILLS

Languages	Java, JavaScript, Python, JS
Frameworks	Spring Boot, Angular, Node, ReactJS, Django, Flask, Fast-API
Cloud	AWS (DynamoDB, S3, EC2, Cloud Front, Lambda, RDS, Terraform, API Gateway), GCP, Firebase
Tools	Jenkins, Docker, Github, RabbitMQ, Redis, Strapi
Inter Personal Skills	Verbal and Written Communication, Problem-Solving, Team-work, Leadership

WORK EXPERIENCE

Full stack Engineer
Quicko

Jan 2025 - July 2025
Ahmedabad, India

- **Income Tax Filing Platform | AWS Lambda, AWS Step Functions, DynamoDB, API Gateway, Strapi, Jenkins**
 - Developed the **homepage dashboard** aggregating real-time summary cards for key modules—**File, Save, Advance Tax, Investments, and Connected Accounts**—to provide users with a centralized, actionable tax overview.
 - Built the **Pay module** for seamless **advance/self-assessment tax payments**, enabling users to enter amount, generate challans, and track payment status. Integrated timeline-based tracking (e.g., payment confirmed, awaiting ITD confirmation) and intelligent **suggestions** based on tax profile. Supported **multi-year payments** and consolidated recent payment insights for better financial visibility.
 - Built **Foreign Income feature** covering multiple income types: **dividends, interest, and other sources**, ensuring accurate data flow and backend computation.
 - Implemented the **Tax Paid Outside India feature**, enabling users to report income and taxes paid abroad. Integrated **DTAA-based relief computation** to avoid double taxation where applicable and delivered a **relief summary view** aggregating all eligible deductions country-wise for improved tax transparency.
 - Refactored and updated application architecture for **Assessment Year 2024–25**, improving maintainability and system-wide performance.
- **Productivity Tooling | Node.js, CLI, Excel Parsing, Code Generation**
 - Engineered a Node.js-based **CLI tool** to parse Excel schemas and auto-generate **TypeScript objects, JSON schemas, and mixins**—used directly in Angular applications. Enabled seamless **excel-to-json** and **json-to-schema** conversions, ensuring schema consistency, significantly reducing boilerplate, and eliminating up to **95%** of manual model creation effort.
- **Cloud Infrastructure | AWS, DevOps, CI/CD**
 - Utilized **AWS DynamoDB** to manage user data, **API Gateway** for endpoint configuration with Lambda integrations and authorizers.
 - Deployed applications via **AWS Lambda**, implemented centralized logging with **CloudWatch**, and handled authentication/authorization using **IAM policies**.

Software Engineer
Emerging Five

Jan 2024 - December 2024
Ahmedabad, India

- **End-to-end e-commerce solution | Java, Spring Boot, Microservices, Redis, Spring Security, Rest API**
 - Architected scalable microservices-based **e-commerce platform** using **Java Spring Boot, Spring Cloud Gateway, Netflix Eureka, and Redis caching**, achieving enhanced performance and modularity while integrating business-critical APIs and dynamic checkout logic.
 - Engineered an admin portal with advanced **role-based access control, approval workflows, and voucher/discount management**, increasing user retention by **30%** through strategic implementation of offers and incentive programs.
 - Enhanced robust backend architecture with **APIs for product and draw listings, promotions, and premium product sections**, ensuring seamless integration with the frontend and driving platform scalability and **user engagement**.
- **Kalupur Bank Net banking Portal | Python, Selenium, AWS EC2, Batch Processing, Load Testing**
 - Conducted large-scale **performance testing** for Kalupur Bank's **net banking portal**, simulating over **6,000 users** with **2,000+ concurrent sessions** using Selenium and Python. Identified **critical service bottlenecks** across multiple integrated systems, including **Finacle** and new **net banking service** builds, leveraging **AWS EC2** for scalable **load testing**.
 - Diagnosed **critical service failures** and **optimized backend workflows**, tracking **detailed metrics** like **page load times** and **error frequencies**, leveraging database operations and batch processing to enhance performance testing, ensuring smooth transaction handling across legacy and new banking services.

Independent Software Engineer
Freelance

Ahmedabad, India

- **CGM Preamble (Patient Dietary & Glucose Monitoring System) | Flask, D3.js, jsPDF, AWS EC2, S3, RDS, Unicorn, Nginx, Supervisor, OAuth, Python, JavaScript, SQL**
 - Designed and deployed a scalable web application using **Flask**, integrated with **D3.js** for **interactive glucose and meal impact visualizations**, and **jsPDF** for **automated report generation**. Leveraged **AWS services (EC2, S3, RDS)** with **Gunicorn, Nginx, and Supervisor** for **efficient deployment**. Engineered robust APIs for secure patient data retrieval, **Tryvital API integration**, and **timezone-consistent data aggregation**, **optimizing performance and reliability**.
 - Built a secure, high-performance backend using Flask and AWS RDS, ensuring efficient data processing and storage of glucose and dietary statistics. Designed RESTful APIs for seamless integration with external data sources and applied advanced data pipelines with **chunked fetching**, deduplication, and cleansing to meet API constraints, delivering accurate insights and reports.

Software Developer
Epitome Corporation Pvt. Ltd.

Jan 2023 - Nov 2023
Ahmedabad, India

- Developed a web-based **Routine Management App** using Laravel, a PHP-based framework, to **streamline academic timetable** creation and management for **administrators, teachers, and students**. The app includes authentication mechanisms for secure access, employs MySQL for data management, and utilizes the Data Tables plug-in for interactive data presentation.

PROJECTS

Eventify Event Management Application | Spring Boot, ReactJs, Microservices, Docker, Spring Security, Google OAuth2, RabbitMQ, GraphQL, AWS S3, AWS CloudFront, AWS Lambda, PostgreSQL, Redis, CI/CD, SQL

Eventify is a comprehensive event management platform that facilitates seamless event creation, registration, and participant engagement. The application leverages a microservices architecture to deliver a robust and scalable solution, integrating various technologies for enhanced functionality.

- Spearheaded and implemented a microservices architecture using Spring Boot, containerized with Docker, and orchestrated via Docker Compose for containerization and streamlined deployment.
- Implemented service discovery with Eureka Server to enable dynamic inter-service communication, and load balancing and incorporated Spring Cloud Gateway for routing and unified Rest API management and Swagger documentation.
- Developed secure authentication using Spring Security, JWT, and Google OAuth2 for the eventify_authentication service.
- Built a GraphQL-enabled eventify_event service for efficient data querying.
- Executed a notification service using RabbitMQ for message queuing and sending emails and notifications to users.
- Integrated AWS S3 and CloudFront for secure media storage and delivery using signed URLs.
- Implemented a global exception handling mechanism and standardized API response structures.
- Developed utility for QR code generation, integrating with event workflows for enhanced user interactions.

Detection and Analysis of Lunar Mineralogy from Hyperspectral Data | Python, Principal Component Analysis (PCA), Deep Learning, Hyperspectral Data Analysis

- Led an ISRO-funded project to analyze lunar surface mineral composition using hyperspectral data from Chandrayaan-2's Imaging Infrared Spectrometer (IIRS), employing Principal Component Analysis (PCA) and deep learning for data preprocessing and classification.
- Developed a classification model that achieved 86% accuracy, matching state-of-the-art techniques in lunar mineral analysis, ensuring precision and reliability in the results.

Land Use Land Cover Classification using Deep Learning Techniques | Python, DL, UNet, Geospatial Data Analysis

- Led a research project utilizing Synthetic Aperture Radar (SAR) images and deep learning techniques (UNet) for land use/land cover classification, achieving 85% accuracy and demonstrating potential for high-resolution mapping.
- Developed a robust segmentation model for land classification, leveraging advanced deep learning methodologies to process and analyze geospatial data effectively.

Smart Irrigation System | Flask, DenseNet, Deep Learning, Fuzzy Inference, Soil Moisture API, Weather API

- Built a Flask app that displayed soil moisture, weather data (via API), and crop condition using deep learning models like DenseNet and ResNet, achieving a 97% accuracy rate in classifying plants as healthy or drooping.
- Blended these four factors in a fuzzy inference engine to compute irrigation time for optimal crop growth increasing the plant growth rate by 27.85%.

PUBLICATIONS

[“Towards Automating Irrigation: A Fuzzy Logic based Water Irrigation System using IoT and Deep Learning“ Modeling Earth Systems and Environment \(July 2022\)](#)