

# Sarthak Patel

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## EDUCATION

### Arizona State University

May 2025

*Master of Computer Science, GPA: 4.0/4.0*

*Tempe, AZ*

**Coursework:** Mobile Computing, Foundations of Algorithms, Software Security, Data Visualization, Data Mining

### Institute of Technology, Nirma University

June 2023

*Bachelor of Technology in Computer Science and Engineering, GPA: 8.64/10.0*

*Ahmedabad, India*

- Secured a position in the top 6% of 323 students in the Computer Science department.

**Coursework:** Design & Analysis of Algorithm, Software Engineering, Advanced Java, Database Management System.

## TECHNICAL SKILLS

**Programming Languages:** Java, Kotlin, JavaScript, SQL, C++, C#, Python, PHP

**Databases:** PostgreSQL, MySQL, MongoDB, Firebase, AWS, Microsoft SQL Server

**Tools/Technologies:** Android SDK, GCP, Big Query, Postman, Android Studio, Gradle, JIRA, Confluence, VS Code, Agile, XAMPP, NetBeans, Docker, Figma, AdobeXD, Crashlytics

**Libraries/Frameworks:** React Native, React.js, Node.js, Dagger, Retrofit, Volley, Glide, Picasso, Room, TensorFlow Lite, Lottie, Flask, Pandas, ScikitLearn, Keras, Spark, Git, MLFlow, Espresso, Mockito

## EXPERIENCE

### Tech Holding India Pvt. Ltd.

December 2022 – May 2023

*Software Developer Intern*

*Ahmedabad, India*

- Connected Firebase to store and manage data using Retrofit for handling APIs and leveraged GPS for precise tracking and GCP's RouteAPI to fetch optimized routes and nearby accommodations, achieving a 25% reduction in drop-off rates.
- Designed graphically around 10 animations enhancing user experience to add more interactivity by using Jetpack Compose, Canvas and Lottie library, resulting in a 30% increase in choosing places that aligns closely with visitor's expectations.
- Led the integration of offline maps using Android SDK's MapView and Tile Overlay APIs, and developed a custom trip planning module utilizing RecyclerView and LiveData, ensuring custom itinerary generation.

## PROJECTS

### TowTech Connect | Java, AWS, BigQuery, TFLite, MPAndroidChart, CameraX

- Implemented a Smart Towing Assistance system in Java, integrating CameraX for incident documentation and utilized BigQuery to fetch daily data, and integrated an auto-downloadable ML model by TensorFlow Lite to measure k-score for recommending towing locations and times, processing up to 100 requests per second during peak times.
- Enabled multilingual support with 22 different languages and background services with real-time updates for reporting, added interactive bar charts and scatter plots by MPAndroidChart library to track service request metrics.

### RetailSense Inventory Manager | React Native, Room, MQTT, Biometric, Sensors, Github, MediaPlayer

- Crafted an inventory manager in React Native that supports connection with up to 2 barcode scanners simultaneously, embedded audio for voice-guided accessibility by TextToSpeech library, benefiting users who have visual impairments.
- Achieved a 25% increase in operational efficiency through enhanced real-time stock monitoring capabilities, merged with improved security and user authentication via integrated fingerprint access by the Biometric library.
- Strengthened CI/CD pipelines following agile development by Jenkins and deployed the application across 7 stores in the US, ensuring faster updates, and merged automated testing suites for 95% test coverage by Espresso and Mockito.

## PUBLICATIONS

### Utilizing Federated Learning for Accurate Prediction of Covid-19

Link: <https://ieeexplore.ieee.org/document/10134193>

- Trained and fine-tuned 4 CNN models employing a clinical real-time CT-scan dataset to boost model accuracy significantly for large number of clients by using PyTorch, scikit and keras libraries in Python which improves accuracy by approximately 2% compared to traditional machine learning methods.
- Steered field progress by presenting pioneering research at a prestigious IEEE conference, contributing to a remarkable 20 % increase in the advancements for privacy preservation by homographic encryption (Paillier cryptosystem).
- Achieved recognition as the top paper in the computer science department and nominated for the prestigious Vikram Awards for groundbreaking contributions.