

SAHIL BELCHADA

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SUMMARY

B.Tech Computer Engineering graduate with hands-on experience building AI-powered solutions and data engineering systems in Python and Java, including a microservices-based, event-driven financial analytics platform with real-time ETL pipelines, dimensional data modeling, and ML forecasting. Skilled in designing data pipelines that clean, normalize, and process data from multiple sources, integrating LLMs (Gemini, Groq) and RAG architectures, and working with relational, analytical, and NoSQL databases. Comfortable owning problems end-to-end and collaborating across teams to translate requirements into reliable, well-tested, cloud-ready applications, with working knowledge of AWS and Google Cloud.

SKILLS

AI Technologies: LLM Integration (Gemini, Groq), RAG (Retrieval-Augmented Generation), LangChain, ChromaDB Vector Stores, Prompt Engineering, NLP Sentiment Analysis, Forecasting (LSTM, Prophet, Linear Regression)

Data Pipelines & ETL: Extract-Validate-Clean-Load Pipelines, Data Normalization & Deduplication, Apache Airflow DAG Orchestration, Apache Kafka Event Streaming, Dimensional (Star Schema) Modeling

Languages: Python, Java, JavaScript, SQL

Databases: PostgreSQL (Star Schema / Time-Series), Redis, MongoDB, MongoDB Atlas, SQL Basics

Backend & Frameworks: FastAPI, Spring Boot, Node.js, Express.js

Infrastructure & Cloud: Docker, Docker Compose, Kafka, Prometheus, Grafana, AWS, Google Cloud, WebSockets, Microservices Architecture

Frontend: React.js, Next.js, Tailwind CSS

Testing & SDLC: Git & GitHub Version Control, Unit Testing (Pytest, JUnit), Agile/SDLC Practices, Code Reviews

EXPERIENCE

Flutter & Backend Developer Intern — Software Development Cell (SwDC), K.J. Somaiya School of Engineering

Project: MoM Generator — an AI-powered meeting minutes and transcription tool

- Built a RAG-based chatbot vector store in Python (rag.py) using ChromaDB and LangChain, with fast-fallback logic to clean and route data reliably and prevent request timeouts.
- Implemented an offline, local Faster-Whisper fallback in Python (transcribe.py) for reliable speech-to-text transcription without dependency on internet connectivity.
- Built FastAPI backend services in Python with psycopg2 for PostgreSQL integration, handling data storage, retrieval, and normalization for meeting records.
- Integrated the Gemini API and Groq for AI-powered summarization and NLP-driven data extraction from unstructured meeting transcripts.
- Optimized backend CPU/GPU resource usage by designing client disconnection monitors in main.py, improving pipeline efficiency.
- Implemented JWT and bcrypt-based security layers to protect sensitive data, and containerized services with Docker and Docker Compose for consistent cloud deployment.
- Developed the Flutter frontend with Provider for state management, integrating Firebase Auth and Google Sign-In for secure authentication.
- Programmed native mono WAV audio chunk merging on the client side (meeting_provider.dart) to support speaker diarization.
- Took ownership of diagnosing and fixing backend timeout and disconnection issues end-to-end, following Git-based version control and code review practices within the SDLC.

PROJECTS

MarketMind AI — Real-Time Financial Analytics & Market Prediction Platform — Microservices: Java + Python + React + Kafka Redis <https://market-mind-ai-q1kl.vercel.app/>

- Designed a microservices architecture with a Spring Boot (Java) ingestion service, a FastAPI (Python) analytics service, and a React 19/Vite dashboard, communicating via Apache Kafka event streaming.
- Built an automated data pipeline ingesting live stock prices every 30 seconds from the Yahoo Finance API, with producer-consumer Kafka streaming, broker-failure fallback logic, and raw JSON persistence.
- Developed an Extract-Validate-Clean-Load (ETL) pipeline orchestrated with Apache Airflow, feeding a dimensional star-schema PostgreSQL warehouse optimized for financial time-series queries.
- Implemented multiple forecasting models (Linear Regression, Prophet, LSTM) and a risk analytics module (Beta, Sharpe Ratio, VaR) with a model registry tracking RMSE, MAPE, and R^2 for model comparison.
- Built a news sentiment-analysis pipeline with confidence scoring, and an AI Copilot enabling natural-language queries over market data.
- Added Redis caching for high-performance query optimization, JWT authentication, live WebSocket price streaming, and Prometheus/Grafana monitoring, with the full stack containerized via Docker Compose and version-controlled with Git.

AI Personal Finance App — Next.js + Node.js + MongoDB

- Built a full-stack personal finance tracker using Next.js, Node.js, and MongoDB to manage expenses, budgets, and subscriptions.
- Designed a CSV ingestion pipeline with auto-categorization of bank transactions — an ETL-style workflow for cleaning and structuring raw financial data, improving accuracy and reducing manual entry.
- Integrated AI-powered insights to automatically summarize monthly spending patterns and generate personalized financial suggestions.

Aurizen — Social Habit Tracking Application — Flutter + Supabase

- Built a Flutter/Dart app with Supabase (PostgreSQL, Auth, Realtime, Storage) and an offline-first architecture using SQLite with automatic sync.
- Applied Repository and Service layer patterns with Row Level Security (RLS) and conflict resolution for reliable offline/online data sync.
- Implemented Firebase Cloud Messaging and Supabase Realtime subscriptions for live cross-device notifications and sync.

HaritKranti — Farmers' Platform — MERN Stack (Aug 2025 – Nov 2025) haritkranti-s-3m17.vercel.app

- Built a full MERN stack platform with product listings, crop guidance features, and secure JWT-based authentication.
- Developed REST APIs using Node.js and Express, and integrated MongoDB Atlas with optimized Mongoose schemas for scalable data storage.
- Implemented multilingual support using a translation API, enabling real-time UI translation into multiple regional languages.

EDUCATION

B.Tech in Computer Engineering — K.J. Somaiya College of Engineering, Mumbai | Expected Graduation: 2027

CERTIFICATIONS

- AWS Cloud Technical Essentials — AWS, 2026
- UX Design Fundamentals — Coursera, 2025
- Create Your UX Portfolio with Adobe Portfolio — Coursera, 2025
- Fundamentals of Graphic Design — Coursera, 2025