

# Bhargav Patel

Senior Full Stack & Data Engineer

✉ bhargav.py.developer@gmail.com

☎ +91 9662316938

🌐 bhargavpatel.in

📄 bhargav-patel-tech.blogspot.com

🌐 bhargavpatel2404

</> bhargav\_inixture

📄 github.com/bhargav2800

## 👤 SUMMARY

- Skilled Senior Full Stack & Data Engineer with 4+ years of experience in software development.
- Extensive expertise in Cloud technologies (AWS, Azure), designing scalable and efficient solutions for deployment and monitoring.
- Proficient in AI and Machine Learning, specializing in generative AI, predictive modeling, and data-driven insights.
- Skilled in web and API development, leveraging frameworks like Django/DRF, FastAPI, ReactJS, and NextJS to build robust applications.
- Experienced in leading cross-functional teams, managing full project lifecycles, and delivering high-quality software solutions.
- Adept at integrating advanced technologies like microservices, ETL pipelines (Airflow, Fabric), and real-time analytics into production systems.
- Passionate about continuous learning, staying at the forefront of Cloud, AI, and full-stack development innovations.

## ⚙️ SKILLS

- **Languages:** Python, SQL, HTML, CSS, Javascript
- **Frameworks & Libraries:** Django, Django Rest Framework (DRF), FastAPI, ReactJS, NextJS, GraphQL, LangChain, LlamaIndex, Matplotlib, Seaborn, Numpy, Pandas, Scikit-learn, Scrapy, BeautifulSoup, Unit-test, Fabric Data Pipelines, Medallion Architecture
- **Cloud & DevOps:** Amazon Web Services, Azure, CI/CD, Jenkins, Terraform, Docker, Cloud Watch, IIS Server
- **Databases:** MySQL, PostgreSQL, DuckDB, MongoDB, DynamoDB, OpenSearch, ChromaDB, Redis, Elastic Search, Cosmos DB
- **Tools & Technologies:** Apache Airflow, Streamlit, Celery, RabbitMQ, WebSocket, ETL (Data Pipeline), HuggingFace, OpenAI, Google APIs, Payment Gateways (Razorpay, Paypal, Stripe), TinyMCE WYSIWYG Editor, Protean, Webhook, Twilio, Bolt, Cursor, Microsoft Fabric, Lakehouse, Data Warehouse Modeling, ETL (Fabric, Airflow)
- **AI & Machine Learning:** Generative AI, OpenAI, Gemini, MistralAI, HuggingFace, LangChain, LlamaIndex, Machine Learning, Statistical Analysis, Data Preprocessing
- **Soft Skills:** Leadership, Team Collaboration, Project Management, Technical Decision Making, Client Communication

## 📁 PROJECTS

### • Intelligent Data Deduplication & Clustering Platform

- **Overview:** A machine learning-based platform for identifying duplicate records, clustering similar entities, and continuously improving accuracy through user feedback and automated retraining.
- **Details:**
  - \* Developed a deduplication algorithm to detect potential duplicate records and group them into clusters.
  - \* Built scalable backend services using FastAPI for data processing and model integration.
  - \* Designed and developed an internal actionable UI using Next.js for reviewing and validating deduplication results.
  - \* Enabled manual review workflows, allowing users to approve/reject matches and improve overall data quality.
  - \* Implemented feedback-driven retraining pipelines to continuously enhance model accuracy.
  - \* Established automated learning loops leveraging real user corrections for ongoing model optimization.
- **Technologies:** FastAPI, Next.js, Python, Machine Learning, REST APIs, PostgreSQL/NoSQL

### • Data Platform with Medallion Architecture (Microsoft Fabric)

- **Overview:** A scalable data engineering platform built on Microsoft Fabric, implementing Medallion Architecture to enable reliable data ingestion, transformation, and analytics.
- **Details:**
  - \* Designed and implemented automated data pipelines in Microsoft Fabric for ingesting and transforming data.
  - \* Structured data across Bronze → Silver → Gold layers following Medallion Architecture best practices.
  - \* Built robust ETL workflows to process data from multiple sources on a scheduled basis.
  - \* Integrated Git-based version control within Fabric for pipeline and workspace management.
  - \* Developed data models and warehouse layers for analytics readiness.

- \* Created Power BI dashboards and reports for business insights.
- **Technologies:** Microsoft Fabric, Data Pipelines, Python, SQL, Lakehouse, Power BI, Pyspark
- **Data Analytics and Activity Tracking System**
  - **Overview:** A robust platform to track and analyze file activities across multiple data sources, supporting Azure File Storage, Microsoft Teams, and other systems, with automated workflows and real-time insights.
  - **Details:**
    - \* Automated metadata processing from multiple regional data sources using Airflow DAGs with scheduled executions.
    - \* Designed a scalable queuing system for efficient handling of data pipelines across diverse sources.
    - \* Consolidated and structured metadata in DuckDB for high-performance querying and analysis.
    - \* Built an intuitive Streamlit analytics dashboard for real-time visualization and reporting of file activities.
    - \* Integrated AI tools to enable semantic file search, detect duplicate projects, and surface related content using embeddings and pre-trained models with fine-tuning.
    - \* Optimized workflows and maintained scalability for deployment in a production environment.
  - **Technologies:** Python, Apache Airflow, Streamlit, DuckDB, Redis, PostgreSQL, Azure, Docker
- **AI-Driven Book Authoring Platform**
  - **Overview:** A platform modernizing traditional books with AI tools for styling, covers, and content enhancement, enabling users to upload, update, or write books.
  - **Details:**
    - \* Designed Django architecture for a seamless user experience.
    - \* Migrated old books to the system using Azure Blob Storage and Watcher API.
    - \* Integrated TinyMCE editor for easy book writing and editing.
    - \* Integrated Focus and OpenAI APIs for generative AI content enhancement.
    - \* Implemented Redis storage and ChromaDB for content vectorization.
    - \* Deployed the platform on Azure VM for scalability and security.
    - \* Developed a workflow to generate AI-powered books from uploaded content or book PDFs based on user input.
  - **Technologies:** HTML, CSS, Javascript, Bootstrap5, Crispy Forms, Django, PostgreSQL, LangChain, OpenAI, Azure, TinyMCE, WebSocket, Payment Gateways (Razorpay, Stripe), ChromaDB, OpenSearch
- **Sports Data Intelligence Platform**
  - **Overview:** A platform for football league agencies providing real-time player information and predictive insights using scraped data and ETL pipelines.
  - **Details:**
    - \* Facilitated client communication to deliver functionality and gather new feature requirements.
    - \* Led project development, coordinating frontend and backend teams for seamless progress.
    - \* Contributed to backend API development for statistical modules related to player performance and metrics.
    - \* Developed ETL pipelines to automate data extraction, transformation, and loading from external sources (e.g., Sports.io, ESPN.com).
    - \* Designed system architecture and PostgreSQL schema for efficient data storage and queries.
  - **Technologies:** Django Rest Framework (DRF), React, Apache Airflow, Astro, Web Scraping, PostgreSQL, IIS Server, GraphQL
- **Learning Management Platform**
  - **Overview:** A multi-tenant educational platform with microservices for authentication, administration, and safety, enhancing institutional collaboration.
  - **Details:**
    - \* Implemented ST4S for safety features.
    - \* Built microservice APIs for Authentication, Symphony, School Administration, and Provision modules.
    - \* Wrote test cases to ensure functionality and reliability.
    - \* Conducted technical analysis to optimize system performance.
  - **Technologies:** HTML, CSS, React, FastAPI, Protean, Microservices, Redis, Celery, Elastic Search, Code Fresh, Terraform
- **Performance Management System (PMS)**
  - **Overview:** A SaaS-based workforce management solution with modules for leave, project, and employee activity tracking, deployed on AWS.
  - **Details:**
    - \* Made technical decisions to guide project direction.
    - \* Gathered requirements to align development with business needs.
    - \* Built permission-based access infrastructure for secure user management.
    - \* Implemented authentication mechanisms.
    - \* Developed resource management modules for employee and project tracking.
    - \* Designed the database schema, optimized queries, and benchmarked performance.
    - \* Managed production environment deployment and maintenance.
  - **Technologies:** Python, DRF, React, Redis, Celery, AWS (EC2, S3, Lambda, API Gateway), Sentry, Cloud Watch, Webhook, Twilio, Terraform

## EDUCATION

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- Bachelor of Computer Engineering

Aditya Silver Oak Institute Of Technology

## CERTIFICATIONS & ACHIEVEMENTS

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- GATE 2021 - Secured All India Rank 9,081
- NPTEL Certification - C Programming (ELITE Grade, IIT Kharagpur)