

# SHRESTHA GUPTA

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## Summary

### Backend Engineer | AI Engineer | Software Engineer

Backend, AI/ML, and cloud engineer with 2+ years of experience designing and deploying scalable APIs, microservices, and AI-powered applications. Proficient in Python (FastAPI, Flask, Pandas, Scikit-learn), JavaScript (Node.js, Express), and cloud platforms (Azure Functions, Azure Web Apps, Docker, ARM Templates). Skilled in REST API development, microservices architecture, OAuth2/JWT authentication, and PostgreSQL/MySQL/MongoDB optimization. Experienced in CI/CD pipelines (Azure DevOps, GitHub Actions), serverless computing, and data modeling for real-time analytics. Strong background in machine learning integration (predictive analytics, NLP, recommendation engines) using Gemini API, GPT-3.5, K-Means clustering. Adept at delivering AI-driven solutions that improve performance, scalability, and business outcomes.

## Skills

**Programming & Frameworks:** Python, FastAPI, Flask, Pandas, Scikit-learn, NumPy, JavaScript, Node.js, Express.js, Dart, Flutter, HTML, CSS, Tailwind CSS, Power Fx

**Backend & APIs:** REST API Design, Azure Functions, Express.js, OAuth2, JWT, API Gateway, Azure API Management (APIM), Modular Architecture, API Versioning, Rate Limiting

**Cloud & DevOps:** Microsoft Azure (Web Apps, API Management, Functions, Serverless Deployment), ARM Templates (Infrastructure as Code), Azure DevOps, CI/CD Pipelines, Docker, Git, GitHub Actions, Containerization

**Databases & Data Modeling:** MongoDB (NoSQL, Document Modeling, Indexing), PostgreSQL (Relational Modeling, Query Optimization), MySQL, Dataverse, SQL Query Tuning

**AI/ML & Data Science:** Gemini API, GPT-3.5, K-Means Clustering, Scikit-learn, NLP (Text Processing), Exploratory Data Analysis, Seaborn, Matplotlib, Recommendation Systems, Predictive Analytics

**Automation & BI Tools:** Power Automate (Workflow Automation, Approvals), Power BI (Real-Time Dashboards, Hiring Analytics), Spotify API

## Professional Experience

### Software Engineer- Full Stack Development

Pursuit Software – Kolkata, India (Aug 2022 – Present)

## Projects

### ◆ Music Recommendation System – AI/ML Model Integration & Backend Development (MSc)

Feb 2022-Jul 2022 | Flask, Scikit-learn, MySQL, Spotify API

- Developed a hybrid recommendation engine combining K-Means clustering and content-based filtering, achieving ~82% prediction accuracy.
- Collected and processed 1,500+ songs from Spotify API, performing feature engineering for genre and style classification.
- Designed and implemented Flask REST APIs to serve real-time recommendations, integrating directly with AI/ML model outputs.
- Built a MySQL database to store song metadata, cluster results, and user preferences for faster API queries.
- Created a simple HTML/CSS/JS frontend with embedded Spotify links to showcase recommendation results.
- Delivered a working prototype demonstrating AI model deployment in a production-ready backend, securing top project grade (CGPA: 9.96/10).

### ◆ **AI-Powered Fitness Coaching API (Pursuit Software)**

*Feb 2025 – Present | Fast API, Azure Functions, MongoDB, Gemini API, Azure API Management, Azure DevOps, Docker*

- Architected a serverless backend using Azure Functions and Fast API, achieving sub-500ms cold starts for event-driven API execution.
- Developed stateless REST APIs integrating Gemini API to deliver personalized AI-powered fitness and nutrition recommendations.
- Designed and optimized MongoDB schemas with indexing for efficient storage/retrieval of 3,000+ AI-generated user records.
- Containerized backend services with Docker for consistent deployment across development, testing, and production.
- Configured Azure API Management with OAuth 2.0, API versioning, and rate limiting for secure public API publishing.
- Automated builds and deployments with ARM templates and Azure DevOps CI/CD pipelines.

### ◆ **Talent Pool Platform – Backend Microservices & Flutter Frontend (Pursuit Software)**

*Mar 2024 – Present | Node.js, PostgreSQL, Flutter, Power BI*

- Engineered 25+ Node.js microservices with REST API endpoints, RBAC, and JWT authentication for secure recruitment workflows.
- Designed and normalized PostgreSQL schemas to manage 1,500+ candidate profiles, optimizing queries for reduced API latency.
- Developed Flutter-based frontend with responsive UI, search filters, and candidate profile cards, integrated directly with backend APIs.
- Integrated backend services with Power BI to deliver 4 interactive hiring analytics dashboards in real time.
- Achieved ~50% faster candidate shortlisting and ~60% fewer recruiter follow-ups through backend API optimization.

### ◆ **Timesheet Management System – Backend API Development & Flutter Frontend (Pursuit Software)**

*Nov 2022 – Mar 2024 | Flask, MySQL, Flutter, Power Platform*

- Built Flask REST APIs for time logging, leave management, and utilization tracking, handling 20,000+ records in MySQL.
- Optimized SQL queries to improve API performance and report generation by ~40%.
- Developed Flutter mobile-first frontend enabling employees to log hours, request leaves, and view approval status seamlessly.
- Integrated backend with Power Automate workflows to send reminders, escalate pending approvals, and trigger alerts, saving ~80 hrs/month.
- Provided managers with Power BI dashboards using live API data to track utilization, absenteeism, and billable vs. non-billable hours.

## **Education**

- **Master of Science**  
Maulana Abul Kalam Azad University of Technology  
July 2022 | CGPA: 9.96/10
- **Bachelors of Science in Computer Science (Hons.)**  
University of Calcutta  
July 2019 | 59%