

Himanshu Srivastav

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PROFESSIONAL SUMMARY

Python Full Stack Developer with **2+ years of production experience** building and deploying Django, FastAPI, and Flask applications serving active enterprise clients across legal tech, healthcare, hospitality, and WhatsApp SaaS verticals. Specialist in **async architectures** (ASGI / Uvicorn / aiomysql / SQLAlchemy async), **AI-powered biometric systems** (DeepFace, FaceNet, Qdrant), real-time GPS microservices, framework migration engineering (Django → FastAPI), database migration engineering (MySQL → PostgreSQL 18), Selenium automation, RFID hardware integration, and government-compliant REST APIs. Delivered **7 live production applications** at MR Softwares — real client deployments serving paying clients.

WORK EXPERIENCE

Python Full Stack Developer

MR Softwares | Ujjain, MP | May 2023 – Present (2+ Years)

- Designed and shipped **7 production Django/FastAPI applications** serving paying enterprise clients across legal tech, healthcare, hospitality, WhatsApp SaaS, and government sectors — all live in production.
- Led full framework migration** of the eSchool Biometric Attendance service from **Django + DRF to FastAPI** (async-native), replacing synchronous ORM with **aiomysql + SQLAlchemy async** connection pooling; multi-tenant DB routing ported to async query layer; completed end-to-end in **18 working days**.
- Worked in depth on a fully async Django biometric attendance platform (ASGI / Uvicorn / adrf): face enrollment pipeline using DeepFace (FaceNet model, mediapipe detector) → 128/512-dim vector storage in Qdrant → cosine-similarity face matching at sub-second latency across thousands of enrolled records.
- Integrated Silent-Face Anti-Spoofing (MiniFASNetV2, PyTorch) for liveness detection, blocking photo and video replay attacks; implemented as a lazy singleton with fail-open startup strategy to ensure zero downtime if model files are absent.
- Engineered LatLong, a real-time GPS tracking microservice: Django/DRF middleware between Traccar GPS server and OpenSearch telemetry; geodesic radius calculations (geopy) trigger automated WhatsApp geofencing alerts to parents when school buses approach pickup points.
- Worked on WaahApp (service.waahapp.com), a WhatsApp Business SaaS using Meta's official Cloud API with Celery + Redis task queues, Django Channels WebSocket real-time chat, OCI Queue/Streams for webhook ingestion, and category-specific billing wallets (MARKETING / UTILITY / AUTHENTICATION / SERVICE).
- Executed two major infrastructure migrations:** (1) WaahApp full-stack migration — MySQL → PostgreSQL 18 and Azure Blob → OCI Object Storage across a new VPS, migrating **5.08M rows in 15 min 14 sec with zero data loss** in a 2h 15min maintenance window; resolved pgloader generated column incompatibility, jsonb cast failures, PostgreSQL sequence resets, and tuned performance (6 concurrent indexes + shared_buffers=2GB) to achieve sub-second API response times. (2) eSchool service migration from Django+DRF to FastAPI with async DB stack.
- Worked on SCS App (scsapp.in), a multi-court legal scraper: Selenium + Playwright + BeautifulSoup4 crawlers covering Rajasthan, Calcutta, Mumbai City Civil, Madhya Pradesh, and Andhra Pradesh High Courts; APScheduler with MySQL job store; anti-captcha API integration; Azure Functions and Docker deployment.
- Integrated RFID smart card hardware via pyserial in the Nitiraj hotel management system — card issuance, erasure, and room unlock audit logging; hardware-locked software activation using MAC address + UUID device fingerprinting.
- Worked on the MAA government health data platform: custom binary encryption/decryption (hex-swap algorithm) for secure field-device data ingestion; hierarchical models (State → District → Anganwadi → Child) with WHO growth-standard classification; streaming CSV via Django StreamingHttpResponse.
- Containerised all services with Docker + Docker Compose + Nginx + Supervisor; managed Gunicorn / Daphne / Uvicorn processes, Celery workers, and OCI Queue consumers within unified container stacks.
- Optimised Django/FastAPI ORM queries — eliminated N+1 bottlenecks using select_related / prefetch_related and raw SQL aggregation — reducing API response latency measurably across high-volume production datasets.

Python Developer Intern

CodeAlpha | Remote | Oct 2023 – Jan 2024

- Worked on reusable Python automation scripts for recurring data processing pipelines, reducing manual workflow time by 15% and eliminating error-prone steps across team operations.

- Developed and maintained data transformation utilities used in production reporting; contributed to code review and documentation practices within the remote engineering team.

Software Engineer Intern

Oasis Infobyte | Virtual / Remote | Apr 2023 – May 2023

- Delivered 3 client-facing web projects (landing page, portfolio site, temperature converter) within a strict 30-day deadline using Python, HTML5, CSS3, and JavaScript.
- Demonstrated ability to ship functional, polished products from scratch under tight deadline constraints; practiced structured project delivery workflow from day one.

KEY PROJECTS

eSchool Biometric & AI Attendance System — Django → FastAPI Migration

FastAPI, aiomysql, SQLAlchemy async, Unicorn, DeepFace, FaceNet, Qdrant, OpenCV, PyTorch, Anti-Spoofing, MySQL, Azure Blob, OCI Storage | Nov 2024 – Present | MR Softwares

- **Migrated entire service from Django + DRF to FastAPI** with a fully async database stack (aiomysql + SQLAlchemy async); ported multi-tenant DB routing, ORM models, and all API endpoints; completed in **18 working days** with zero production downtime.
- FastAPI async architecture replaced synchronous Django ORM, enabling async pool management (aiomysql) and eliminating blocking DB calls — measurably improving throughput under concurrent attendance-marking load.
- Retained and enhanced AI pipeline: DeepFace FaceNet extracts facial embeddings; Qdrant vector DB performs sub-second cosine similarity matching across thousands of enrolled school staff and student records.
- Silent-Face Anti-Spoofing (MiniFASNetV2 + MiniFASNetV1SE, PyTorch) blocks photo/video replay attacks; lazy singleton loader with fail-open strategy prevents service downtime.
- Concurrent face enrollment using ThreadPoolExecutor (10 workers) with producer-consumer queue; abstracted storage via abstract Storage base class (QdrantDB implements store / update_vector / search / delete).

WaahApp – WhatsApp Business SaaS Platform

Django, Meta WhatsApp Cloud API, Celery, Redis, Django Channels, OCI Queue/Streams, PostgreSQL 18, Daphne | May 2024 – Present | service.waahapp.com

- Full-featured multi-tenant WhatsApp SaaS: bulk template messaging, campaign scheduling, and real-time two-way chat; complete backend with REST APIs, Celery scheduler, webhook receivers, and multi-tenant architecture.
- Implemented category-specific billing (MARKETING / UTILITY / AUTHENTICATION / SERVICE wallets) with EnumChoiceField ORM models and per-send balance enforcement before every API call.
- **Led end-to-end infrastructure migration** (MySQL → PostgreSQL 18, Azure Blob → OCI, VPS cutover) with custom pgloader script, Cloudflare DNS flip, Let's Encrypt SSL via DNS-01 challenge, Nginx WebSocket reconfiguration — **5.08M rows, zero data loss, 2h 15min window**.

LatLong – Real-Time GPS Tracking Microservice

Django, DRF, OpenSearch, geopy, WebSocket, Django Channels, aiohttp, HMAC signed links, MySQL | 2024 – Present | MR Softwares

- Django/DRF microservice as middleware between Traccar GPS server and OpenSearch telemetry storage; geodesic radius calculations trigger automated WhatsApp parent alerts when school buses approach pickup POIs.
- Generated HMAC-signed, time-expiring tracking links (Base64 + SHA-256) for secure parent live-view URLs; broadcasted real-time GPS positions to browsers via Django Channels WebSocket.

SCS App – Legal Court Case Scraper

Python, Selenium, Playwright, BeautifulSoup4, Flask, APScheduler, Azure Blob, Azure Functions, MySQL | Sep 2024 – Present | scsapp.in

- Multi-court scraping engine covering 6+ Indian High Courts (Rajasthan, Calcutta, Mumbai City Civil, MP, Andhra Pradesh); APScheduler with MySQL SQLAlchemy job store; anti-captcha API integration; deployed to Azure Functions and Docker.

Nitiraj – Hotel Management & RFID Door Lock System

Python, PyQt6, SQLite, pyserial, RFID Hardware, MAC+UUID Licensing | Dec 2024 – Present | nitiraj.mrsoftwares.in

- PyQt6 desktop application for hotel front desk with guest check-in/out, group check-in, reservations, and reporting; integrated RFID card writers via pyserial to issue and erase NFC keycards for physical door locks.
- Hardware-locked software licensing using MAC address + WMIC UUID fingerprinting; SQLite schema tracks guest profiles, room hierarchy, reservations, and full unlock audit log.

MAA – Government Child Nutrition Monitoring Platform

Django, DRF, MySQL, openpyxl, Custom Binary Encryption, Docker, Nginx | Dec 2024 – Present

- Government-facing Django platform for MAA scheme; manages child nutritional records across Anganwadi centres with WHO growth standard classification (underweight, stunting, wasting).
- Custom binary encryption/decryption (hex-swap on Windows-1252 encoding) for secure field-device data ingestion; streaming CSV export via Django StreamingHttpResponse for large dataset downloads without memory overflow.

TECHNICAL SKILLS

Languages:	Python 3.10+, JavaScript, SQL, HTML5, CSS3, Shell Scripting
Backend Frameworks:	Django, Django REST Framework (DRF), FastAPI, Flask, adrf (async DRF)
Async & Queues:	aiomysql, SQLAlchemy async, Celery, Redis, Django Channels, Daphne, ASGI, Uvicorn, OCI Queue, OCI Streams, APScheduler
AI / ML / CV:	DeepFace (FaceNet), OpenCV, PyTorch, dlib, Silent-Face Anti-Spoofing, NumPy, Pandas, LLMs, Computer Vision
Vector / Search:	Qdrant Vector Database (cosine similarity, UPSERT, collection mgmt), OpenSearch / Elasticsearch
Web Scraping:	Selenium WebDriver (Chrome/Firefox), Playwright, BeautifulSoup4, Scrapy, anti-captcha APIs
Databases:	MySQL, PostgreSQL 18, SQLite, Qdrant, OpenSearch (multi-DB routing, ORM optimisation, N+1 elimination, pgloader migration)
Cloud & DevOps:	Oracle Cloud Infrastructure (OCI), Azure Blob Storage, Azure Functions, Docker, Docker Compose, Nginx, Supervisor, Linux
Hardware:	RFID Encoder/Reader Integration (pyserial), Biometric Device Integration
Auth & Security:	JWT (djangorestframework-simplejwt), HMAC signed links, custom binary encryption, hardware licensing
APIs & Protocols:	Meta WhatsApp Cloud API, REST APIs, WebSockets, Webhooks, Traccar GPS API, Postman
Tools:	Git, GitHub, Docker, Postman, Agile, code review, API documentation

EDUCATION

B.Tech – Computer Science & Information Technology | GPA: 7.50 / 10.0 | 2021 – 2025

IES IPS Academy, Indore, Madhya Pradesh

Senior Secondary (Class XII) – Science (PCM) | 2019 – 2021

RPM Academy, Gorakhpur, Uttar Pradesh

CERTIFICATIONS

- Python Developer Associate (PDAC-24) — ITechCert / AICERT | Jul 2024
- Computer Vision Builder — IIT Delhi (FITT / MP-IITD) | Mar 2024

KEY ACHIEVEMENTS

- Shipped **7 live production systems in under 2 years** at a product company — spanning AI/ML, real-time infrastructure, desktop applications, cloud automation, and government platforms.
- **Migrated eSchool Biometric service from Django+DRF to FastAPI** with aiomysql + SQLAlchemy async stack, enabling fully async DB operations and improving concurrent throughput — delivered end-to-end in **18 working days**.
- **Zero-data-loss MySQL → PostgreSQL 18 infrastructure migration** of WaahApp (5.08M rows) in a 2h 15min maintenance window — solo — resolving pgloader blockers, jsonb cast failures, enum mismatches, and tuning PostgreSQL from 5–10s timeouts to sub-second API responses.
- Reduced face enrollment processing time by implementing a **10-worker concurrent ThreadPoolExecutor** queue, significantly cutting bulk registration time at production scale.
- Eliminated proxy attendance fraud at client school sites by deploying **Silent-Face Anti-Spoofing** (MiniFASNet PyTorch model) as the first liveness gate before face matching.
- Resolved a critical production billing bug — Django EnumChoiceField integer type mismatch silently zeroing client wallet balances and blocking all WhatsApp template sends — under production time pressure.
- Designed and maintained **420+ Python files across 7 production repositories**; consistently wrote Dockerised, cloud-deployed, maintainable code from day one.