Granth Agarwal

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EDUCATION

APJ Abdul Kalam Technical University   Uttar Pradesh, India
Bachelor of Technology – Computer Science   *Oct 2023 – Present*

TECHNICAL SKILLS

- **Languages**:   Python, SQL, HTML, CSS, JavaScript, Go, Dart
- **Frameworks**:   Django, Django REST Framework, FastAPI, Flask, Flutter, SQLAlchemy, Alembic, Pydantic
- **Databases**:   PostgreSQL, MySQL, SQLite, Redis, Supabase (Postgres), pgvector
- **Tools**:   Git, GitHub, Postman, Docker, RabbitMQ, Grafana, Celery, Nginx, Uvicorn
- **Platforms**:   Linux, Google Cloud Platform, Serverless Functions
- **Skills**:   Backend Engineering, REST API Design, Authentication & RBAC, Asynchronous Processing

EXPERIENCE

Freelance   Remote
Backend Developer (Contract)   *Oct 2025 – Jan 2026*

- **System Design**: Designed and delivered a **scalable backend architecture** using **Django** and **PostgreSQL/Supabase**, improving system reliability and performance under load.
- **Security**: Implemented secure **authentication** and **role-based access control (RBAC)**, strengthening access boundaries and reducing onboarding friction.
- **API Development**: Built and maintained **40+ REST APIs** enabling end-to-end operational workflows for a production-ready platform.
- **Data & Performance**: Optimized data access using **geospatial queries**, **Redis caching**, and **asynchronous processing (Celery + RabbitMQ)** to reduce latency.
- **Quality & Stability**: Improved release stability through extensive **automated testing** and performance tuning, reducing regressions across deployments.

EverythingAboutAI   Remote
Python Developer Intern   *Jul 2025 – Aug 2025*

- **Automation**: Built workflow **automation services** using FastAPI, reducing manual operational effort.
- **No-code Pipelines**: Developed Make.com pipelines, improving execution speed of repetitive business processes.
- **QA & Stability**: Improved product reliability through structured **testing and QA**, identifying edge cases and optimizing input workflows.

PROJECTS

- **Stockway (Role-Based Supply Chain Platform, Geo-Intelligence, Async Ops)**:
  Designed and built a **production-grade, role-based supply chain backend** connecting **shopkeepers, warehouses, riders, and admins**. Implemented **Supabase-backed authentication**, strict **RBAC**, and **end-to-end order workflows** from discovery to delivery. Built **geo-spatial warehouse discovery** using PostGIS, **async task processing** with Celery + Redis, and a clean **REST API layer** supporting inventory, orders, payments, and delivery tracking at scale.
  Tech: Python, Django, Django REST Framework, PostgreSQL/Supabase, PostGIS, Celery, Redis, React.

- **TrustSystem (Identity Verification, Fraud Detection, Vector Search)**:
  Patent-published backend system for continuous **identity verification** using facial and persona embeddings. Built **4 Django apps**, **12+ models**, and **18+ APIs**. Integrated **pgvector** for high-dimensional similarity search enabling anomaly and fraud detection.
  Tech: Python, Django, PostgreSQL (pgvector), Redis, Sentence Transformers.

- **DemoForge (Automated Website Demo Generator, Browser Automation)**:
  Engineered a system that converts any public website URL into a presentation-ready **MP4 walkthrough**. Built a containerized browser automation pipeline using **Playwright** to explore UI elements and record interactions deterministically. Implemented Redis-backed **job queue orchestration**, isolated Docker workers, and a robust **WebM-to-MP4 conversion pipeline** with FFmpeg, validation, and failure-safe state transitions.
  Tech: FastAPI, Playwright, Redis, Docker, FFmpeg, Python.

- **Telemetry Platform (ESP32 IoT Telemetry, BLE Provisioning)**:
  Built an end-to-end IoT system with secure **BLE provisioning (Security 2)** for ESP32 and real-time sensor dashboards. Implemented FastAPI-based **device auth, telemetry ingestion APIs, and WebSocket streaming** with modular, production-ready architecture.
  Tech: Flutter, FastAPI, WebSockets, SQLAlchemy, BLE, ESP32, Docker, Python.

PATENTS AND PUBLICATIONS

Multi-Modal Identity and Behavior Verification System for Online Platforms
Patent Published: November 28th , 2025   —   Application No: 202511094809
A published patent describing a **multi-modal identity verification system** that fuses **biometric embeddings** and **behavioral (persona) embeddings** into a unified **trust anchor**. The system supports **continuous verification**, **drift-tolerant profile checks**, and **cross-account fraud detection** for scalable use across online platforms.