HIRTHIK KUMAR G S

Backend & Data Engineer | Python · SQL · PostgreSQL · Redis · Docker · AWS
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SUMMARY

2026 engineering graduate who has designed, tested and containerised four backend services in Python, including a JWT-secured REST API running on AWS EC2 with RDS PostgreSQL and a Redis-backed rate limiter implementing four algorithms. Works comfortably across PostgreSQL schema design and migrations, Redis caching, Docker and pytest. Seeking a Backend / Data Engineer role; available to join immediately.

TECHNICAL SKILLS

Languages	Python, SQL
Backend	Flask, SQLAlchemy, REST API design, JWT authentication, Flask-Migrate, gunicorn
Databases	PostgreSQL, Redis (caching, rate limiting)
Cloud & DevOps	AWS (EC2, RDS, IAM), Docker, docker-compose, Git
Testing	pytest, fakeredis
Data & ML	PyTorch, OpenCV

PROJECTS

Job Tracker REST API *Deployed on AWS* GitHub

- Designed and deployed a multi-user CRUD REST API (Flask, SQLAlchemy) on AWS EC2 with RDS PostgreSQL, containerised with Docker and served by gunicorn
- Secured it with JWT authentication (Flask-JWT-Extended) and bcrypt-hashed passwords; scoped every query to its owner and returned 404 instead of 403 so resource IDs cannot be enumerated
- Wrote 8 pytest tests covering authentication and CRUD flows; versioned the schema with Flask-Migrate

Stack: Flask, PostgreSQL, SQLAlchemy, Docker, gunicorn, AWS EC2, AWS RDS, pytest

Rate Limiter API GitHub

- Implemented four rate-limiting algorithms (Fixed Window, Sliding Window Log, Sliding Window Counter, Token Bucket) as interchangeable classes behind a single interface, with all state held in Redis
- Packaged the service with a production Dockerfile (gunicorn, non-root user) and tested it against fakeredis, so the suite runs without a live Redis instance

Stack: Flask, Redis, gunicorn, Docker, fakeredis, pytest

URL Shortener API GitHub

- Built a URL-shortening API that generates Base62 short codes and resolves them through a cache-aside layer: Redis first, PostgreSQL on a miss, then a cache write with a 1-hour TTL
- Added a click-analytics endpoint returning total clicks, creation date and original URL for each short code

Stack: Flask, PostgreSQL, Redis, SQLAlchemy, Flask-Migrate, Docker

CLI Log Analyzer GitHub

- Built a command-line tool that parses Nginx/Apache combined-format logs with compiled regex and reports top IPs, top endpoints, error rates and peak hours
- Added a real-time watch mode that raises alerts on error spikes, using a deque-based sliding window with a configurable threshold and window size
- Shipped three commands (analyze, watch, generate) with rich terminal reports and JSON/CSV export; tested with pytest

Stack: Python, rich, argparse, pytest

AI-Powered Pneumonia Detection System *Final Year Project*

- Trained a DenseNet121 classifier on a chest X-ray dataset, reaching 98.40% accuracy on binary and 81.41% on three-class classification
- Built a Flask interface around the model with OpenCV image preprocessing and automated PDF reports generated with ReportLab

Stack: PyTorch, Flask, OpenCV, ReportLab

EXPERIENCE

Associate Recruiter | Cogent Infotech *US-based IT staffing firm* *Jul 2026 – Oct 2026*

- Screened candidates for engineering and IT roles against client technical requirements, matching skills to each opening
- Placed candidates with US-based clients, coordinating both sides from submission through to offer

EDUCATION

B.E. Electronics and Communication Engineering *July 2026*
Sathyabama Institute of Science and Technology, Chennai CGPA: 7.2

CERTIFICATIONS

Claude Academy (Anthropic): Claude 101 · Claude Platform 101 · Claude Code 101 · Claude Code in Action · Introduction to Model Context Protocol *Nov 2026*