

Danny Helou

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Education

University of Toronto · Bachelor of Computer Science & Mathematics · Toronto, ON Sep 2023 - Aug 2027
Coursework: Compilers, Data Structures, Algorithms, OOP, Lin Alg, Computer Architecture, Machine Learning, OS
Achievements: Hackerank Rank #12000 Worldwide, Top ~8 Algorithms Course Exam, Leader UofT Padel Association

Experience

Co-Founder · Gogo Analytica

Tools: Python, Flask, React, MongoDB, NumPy, GIS APIs, Cost Optimization Algorithms Jan 2025 - Apr 2025

- Built **AI-driven road optimization software** integrating terrain elevation (x,y,z) to compute **cost-efficient and safety-aware alignments**, minimizing excavation volume while respecting slope constraints
- Designed and implemented algorithms for **pathfinding, waterflow simulation, and wadi detection**, incorporating direct slope analysis in Python/NumPy to avoid unsafe embankments
- Architected a **Flask backend** with REST APIs to connect optimization routines to a **React-based frontend**, enabling interactive visualization of terrain profiles and path trade-offs
- Automated material & equipment cost models into a live estimator, supporting excavator fleet (35–75 tons) and dynamically adjusting for thickness, slope, and surface layer SN allocation

Software Engineering Intern · Green Data City Oman

Tools: Docker, Kubernetes, Python, Bash, Prometheus, Grafana, NVIDIA CUDA, Bitcoin Core May 2025 - Aug 2025

- Implemented monitoring pipelines with **Prometheus + Grafana** to track **GPU thermal loads, power draw, and hash rates**, enabling proactive scaling of container workloads
- Developed automation scripts in **Python/Bash** for miner lifecycle management (node provisioning, failover routing, difficulty tuning), reducing downtime by **7%**
- Integrated CUDA-enabled optimizations for parallelized hashing, raising throughput across clusters while lowering energy per hash by **0.9%**

Software Developer & AI Engineer · Muraqib

Tools: Python, FastAPI, PostgreSQL, Redis, TensorFlow, IVMS, Fleet Telematics Sep 2024 - Dec 2024

- Designed a central dashboard system integrating **IVMS (In-Vehicle Monitoring System)** telemetry for **fleet management in Oman**, tracking driver behavior, violations, and vehicle health
- Developed ML pipelines to detect unsafe driving patterns and predict **maintenance requirements**, reducing breakdown incidents by **12%**
- Integrated **real-time Redis caching** for telemetry ingestion and optimized PostgreSQL queries for reporting by fleet size (**50+ trucks**)
- Built containerized services in **FastAPI** for modular scaling of driver analytics and national-level fleet insights

Projects

Doctor Doctor · Wound Classification · React.js, jsPDF API, Pytorch, Librosa

- Programmed a 93% accurate ResNet50 CNN with Torchvision for wound classification and cough intensity analysis
- Co-developed an AI diagnostic agent using Flask + React as fullstack app to generate summarized patient reports

NEAT War · Neuro-Evolutionary Game AI · Python, NEAT-Python, Pygame, Flask

- Implemented a Neuro-Evolution of Augmenting Topologies (NEAT) model to evolve both topology and weights, achieving sub-second strategic decisions and surpassing hand-crafted heuristics

Pomodoro Hub · Productivity Platform · React.js, FastAPI, WebRTC, OpenAI API, Three.js

- Developed a cross-platform web app combining Pomodoro timers, group study sessions via WebRTC, and generative AI companions for real-time support

Skills

Languages Python, C++, C, Golang, JavaScript, SQL, Bash, CUDA, HTML/CSS

Technologies React, Flask, FastAPI, Kubernetes, Prometheus, Grafana, Redis, PostgreSQL, MongoDB, WebRTC, Gin, TensorFlow, PyTorch, NumPy, Pandas, Scikit-Learn

Tools Git, Linux, AWS, GCP, NVIDIA GPU Toolkits, SSH, gRPC, Postman, LibP2P, Figma, AdobeXD, Docker