Dongwan (Jamie) Seoh

j2seoh@uwaterloo.ca | linkedin.com/in/jamie-seoh | github.com/dwseoh | dwseoh.com/

Education

University of Waterloo Sep 2025 – Present
Bachelor of Software Engineering ***4.0/4.0 GPA***
- Sponsorship Director @Ignition Hacks, Funding Council @MEF, Event Coordinator @Korean Student Association

Technical Skills

Languages: Python, C/C++, TypeScript & JavaScript, HTML & CSS, SQL, Java, R
Frameworks and Libraries: PyTorch, NumPy, React.js, React Native, Next.js, Svelte, Tailwind CSS, FastAPI, Flask
Developer Tools: Git/GitHub, VS Code, Docker, GCP, Azure, Vercel, Cloudflare, MongoDB, Bash, Figma

Experience

Full Stack Developer Nov 2025 – Jan 2026
Nebula AI *Waterloo, ON*
- Developed a full-stack AI note-taking mobile app with **React Native**, **FastAPI**, and **PostgreSQL**.
- Implemented an **OCR+AI pipeline** with Gemini/OpenAI, enabling handwritten text extraction and summaries.
- Enabled semantic search over **1,536-dim embeddings**, cutting retrieval time by **40%** with IVFFlat indexing.
- Designed multi-tenant data access using Supabase Auth, JWTs, and RLS policies across 3+ relational tables.
- Orchestrated the containerization of backend using **Docker** and deployed to **Google Cloud Run**.
- Automated **CI/CD** pipelines for rapid, reliable deployments and horizontal scalability to Apple's TestFlight.

Software Developer Sep 2025 – Nov 2025
UW Orbital Satellite Mission Design Team *Waterloo, ON*
- Built Mission Control Center dashboards in **React** to improve visibility into satellite telemetry and mission state.
- Implemented **REST APIs** to serve async requests to MCC, standardizing data contracts between subsystems.
- Authored unit and integration tests, achieving **95% UI coverage** with **vitest** for Mission Control Center.

Web Development Intern Jul. 2023 – Aug 2023
PNPT Co., Ltd. *Gangnam District, Seoul*
- Collaborated on early-stage website optimization for a startup, enhancing usability and brand presentation.
- Prototyped responsive UI designs using **Figma** & **React**, accelerating design iterations and stakeholder feedback.
- Debugged and resolved cross-browser compatibility issues, ensuring consistent UI rendering across browsers.

Projects

Quota — DeltaHacks12 First Place | *TypeScript, Next.js, React Flow, Gemini, LangChain, MongoDB*
- Engineered a developer tool providing real-time API cost insights, helping startups cut API spend by up to 40%.
- Built extension with **TypeScript** providing inline cost annotations, heatmaps, and one-click optimizations.
- Indexed codebases <**3s**, **45x faster** than AI IDEs, using **AST parsing** to detect inefficiencies in design choices.
- Created **React Flow** sandbox for budget-aware system planning with **RAG Gemini** chatbot by LangChain.

Personal CRM — Manage Professional Relationships | *Next.js, FastAPI, PostgreSQL, TailwindCSS*
- Built a robust full-stack CRM to centralize and prioritize personal & professional relationships at scale.
- Architected backend with **20+ REST** endpoints, enabling pagination & dynamic fetching for growing datasets.
- Improved system reliability through caching layers and rate limiting, reducing server load by **30%**.
- Designed a **matrix-based algorithm** to rank contacts, enabling users to focus on high-value relationships.

Melodie.ai — Thematic Music Generation | *PyTorch, NumPy, Python, Music21*
- Developed an **LSTM**-based neural network with **PyTorch** to generate folk melodies, reaching coherent sequences.
- Preprocessed MIDI data by standardizing keys and normalizing sequences for simpler, faster training.
- Designed **probabilistic sampling system** with temp. control and nucleus sampling methods, enabling variation.

Awards

2025 & 2024 Euclid Math Contest Top **7.6%** among all contestants

2025 STEM Fellowship Big Data Challenge Finalist
Published ***academic paper:*** *"Literary Factors Analysis" (DOI #: 10.17975/sfj-2025-001).*