

Dongwan (Jamie) Seoh

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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 VS Code extension with **TypeScript** for 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).