# Dongwan (Jamie) Seoh

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## EDUCATION

**University of Waterloo**  Sep 2025 – Current
*Bachelor of Software Engineering, Honours | 2 scholarships awarded | Hackathon Winner x3*  ***3.96/4.0 GPA***

## EXPERIENCE

**Full Stack Developer**  Oct 2025 – Jan 2026
*Nebula — AI-Powered Note-Taking Mobile App*  *Waterloo, ON*
- Built a full-stack mobile app with **React Native** and **FastAPI** employing **agile development** in a team of four.
- Integrated **OCR & AI pipeline** with Gemini/OpenAI, enabling handwritten text extraction and summaries.
- Enabled **semantic search** over **1,536-dim embeddings**, cutting retrieval time **40%** by IVFFlat indexing.
- Secured **user data** by implementing **Supabase Auth** with **RLS policies** and JWTs across 3+ relational tables.
- Orchestrated the containerization of backend using **Docker**, deploying to **Google Cloud Run** with automated **CI/CD** pipelines to ensure rapid, reliable deployments and horizontal scalability to Apple's **TestFlight**.

**Software Engineer**  Oct 2025 – Dec 2025
*UW Orbital — Satellite Mission Design Team*  *Waterloo, ON*
- Designed MCC admin interfaces in **React** with TanStack to **optimize** satellite telemetry data management.
- Implemented **REST API endpoints** to retrieve **ARO requests** for MCC consumption, defining data contracts.
- Authored **unit and integration tests**, achieving **100% test coverage** for UI components from MCC & ARO.

## PROJECTS

**Quota** — Real-time Financial Intelligence For Codebase | ⌂  🏆 DeltaHacks12 First Place
- Engineered a developer tool to **reduce API spend** by up to **40%** with a VS Code extension and web sandbox.
- 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.
- Designed **React Flow** sandbox for budget- & scale-aware planning with **RAG Gemini** chatbot by **LangChain**.

**Personal CRM** — Manage Personal & Professional Relationships | ⌂
- Built a robust full-stack CRM with **Next.js** and **FastAPI** to streamline professional relationship management.
- Architected a **scalable** backend with **30+ RESTful** endpoints by pagination and dynamic data fetching.
- Improved query response by **120ms** with **normalized** schemas, **indexing** and **parameterized queries**.
- Reduced backend server load by optimizing performance using **caching layers** and **rate limiting**.
- Devised **matrix-based importance scoring** to rank contacts and prioritize key relationships efficiently.

**Melodie.ai** — Generate Coherent Folk Melodies | ⌂
- 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.

## 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

## EXTRACURRICULAR INVOLVEMENT

**Sponsorship Director, Head of Finance**  Dec 2024 – Current
*Ignition Hacks | 🔗*  *Toronto, ON*
- Raised **$10K** in sponsorships from partners like Siemens, Deloitte, and UWaterloo to fund a 260-person hack.

## 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).*