# Ji Sung Han

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## EDUCATION

**University of Toronto**                                                        Sep. 2021 – Dec. 2026
*Honours Bachelor of Science in* **Computer Science and Statistics**
- **Technical Director** at UofT Blockchain, **Teaching Assistant** (Calculus), Focus in **AI & Machine Learning**.

**Relevant Coursework:** Databases, Operating Systems, Software Engineering, Algorithm Design, Deep Learning

## EXPERIENCE

**NVIDIA**                                                                                    Winter 2026
*Systems Software Engineer Intern*                                                      *Toronto, ON*
- Improve **system performance and reliability** for **AI/HPC stacks** by profiling and debugging **C++/Linux** services, and building **Python** tooling for benchmarking, telemetry, and regression detection.

**Tesla**                                                                            Sep. 2025 – Jan. 2026
*Data Engineer Intern*                                                                  *Palo Alto, CA*
- Architected a real-time **Kafka + Spark Streaming** pipeline on **Kubernetes** processing **50M+ events/day** for global operations, reducing data lag from **minutes to seconds** with **auto-scaling** and maintaining **p95 latency** <**1s**.
- Built and **productionized** a mission-critical **batch ETL + ML pipeline** on **Spark/Airflow** for **inactive installer risk prediction**, driving ∼**5 account reactivations/week** and delivering an **estimated $15M/year in value**.
- Optimized **Airflow DAGs** across the risk prediction pipeline processing **1M+ rows/day** via vectorized **pandas**, task parallelization, and **SQL partitioning/indexing**, cutting runtime from **5h to 5m** and enabling daily decision cycles.
- Built and deployed an **XGBoost Top-K model** with rule-based signals and **HITL workflows (FastAPI)** for large-scale entity matching (500K+ entities/day), achieving **97% accuracy** while automating **90% of manual operations**.
- Shipped **CI/CD** workflows with **Docker**, **Jenkins/GitHub Actions**, and **Kubernetes**, orchestrating **Airflow** jobs with retries, alerting, and **Data Catalog** integration for **global rollouts**, reducing release cycles by **40%**.

**Colliers**                                                                          May 2025 – Aug. 2025
*Software Engineer Intern*                                                              *Toronto, ON*
- Developed a **FastAPI/Angular** platform (**Python, TypeScript, HTML/CSS**) on **GCP** with **CI/CD**, enabling **40+ brokers** to analyze leases 3x faster through **semantic search and summarization** powered by **LangChain** and **Vertex AI**.
- Reduced **frontend query latency by 30%** (5.0s to **3.5s**) via **Redis caching (GCP Memorystore)** with hashed keys and TTL tuning; enabled **async summarization** using **Python asyncio** and partitioned **BigQuery (SQL)** queries.
- Built a **distributed OCR + LLM-based ELT pipeline** on **Airflow + PySpark (Dataproc)** to extract **60+ fields** from **10k+ PDF/HTML leases**, reducing **hourly batch time** by **52%** (58m to **28m**) via **batching** and **repartition tuning**.
- Replaced 1–3 day manual extraction with automated hourly ELT to **GCS (JSON/CSV)** → **BigQuery (SQL)** feeding Power BI dashboards, enabling **1000+** analysts to refresh in < **1hr** and saving **$25k/yr** by eliminating manual entry.

**LangChain**                                                                         Sep. 2024 – Dec. 2024
*Software Engineer, Open Source*                                                            *Remote*
- Built a **Dropbox document loader** in **TypeScript/Node.js** for **LangChain**, supporting 10k+ files via recursive traversal and temp-file parsing; integrated with **UnstructuredLoader** for document conversion and metadata enrichment.

**Maple Bit Services**                                                                May 2022 – Aug. 2022
*Software Engineer Intern*                                                              *Toronto, ON*
- Improved POS speed by **35%** via **async FastAPI endpoints** on **AWS EC2**, optimized **MySQL/PostgreSQL (AWS RDS)** joins and indexing, and offloaded RPC load using **C++ gRPC** microservices; cut peak-hour latency by 200ms.

**University of Toronto**                                                             May 2024 – May 2025
*Research Assistant / Technical Director*                                                *Toronto, ON*
- Built a **transformer ensemble** (BERT/RoBERTa/XLNet) in **PyTorch/TensorFlow** for crypto fraud detection; improved F1 by **12%** with **GNN-augmented encoders** and **Integrated Gradients** token attribution.

## PROJECTS | View All ↗*

**Lifomation (Cofounder)** | *Angular, Azure OpenAI, Redis, BullMQ, Jenkins, Docker, Dynatrace*
- Co-developed a cloud-native AI document platform (8-person team) with **Angular** frontend and **Azure OpenAI**-powered **RAG**; built scalable workflows using **Redis (pub-sub)** and **BullMQ**.
- Enhanced Azure OpenAI privacy features for **1,000+ users**, resulting in a **Sequoia Capital** product demo.

## TECHNICAL SKILLS

**Languages:** Python, JavaScript (TypeScript), C, C++, C#, Java, Kotlin, Swift, R, Bash, Haskell, HTML/CSS, XML
**Frameworks:** React, NEXT.js, Angular, Spring Boot, Node.js, Express.js, Flask, Django, .NET, TensorFlow, PyTorch
**Cloud & DevOps:** AWS, GCP, Azure, Docker, Kubernetes, OpenShift, Jenkins, GitHub Actions, gRPC