

## WORK AUTHORISATION

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Singapore Citizen, eligible for H-1B1 US Visa, HPI UK Visa and the TTPS HK Visa with no petition required.

## EDUCATION

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### National University of Singapore (NUS)

Master of Science, Mathematics

08/2022 – 01/2025

- Optimisation, Stochastic Analysis, Monte Carlo Methods, Game Theory, Operations Research, Machine Learning, Computational Math, Data Science in Finance, Distributed Computing.

### Nanyang Technological University (NTU)

Bachelor of Engineering, Aerospace Engineering

08/2015 – 01/2020

## PROJECTS

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- **1st Place, Google DeepMind × Cactus Compute Hackathon 2026 (Solo, 90 entrants):** [Optimised FunctionGemma](#) on-device inference with custom query decomposition and confidence routing to Gemini Flash. 0.96 F1, 60% on-device.
- **2nd Place, Google Gemini 3 Hackathon 2026 (Solo, 189 entrants):** [Contour](#) — Full-stack app (FastAPI, Three.js, Gemini Live API) that converts 2D topo maps into flyable 3D terrain with voice tour guide. (5K+ likes on X)
- **Shipped:** - [Teletable](#): Published Mac menubar app serving live sports data (300+ users, Swift).  
- [Notchi](#): MacBook notch tamagotchi for Claude Code sessions (WIP, Swift, Open Source).  
- [OpenPPT](#): Model-agnostic LLM-powered slide generator (WIP, TypeScript, Open Source).
- [KeepIt](#) (VisionOS Game, Swift), [AlgoTrade](#) (ML Stock Selection), [BeamSolve](#) (FEM Calculator), [Housing Value Prediction](#) (KRR/MPI), [Air Pressure Prediction](#) (Apache Spark), Polymarket Whales (Telegram, Polymarket API). [More at skruban.com](https://skruban.com)

## SKILLS

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- **Languages:** Python, PostgreSQL, Swift, JavaScript, TypeScript, VBA, HTML/CSS, Haskell
- **Technologies:** NumPy, Pandas, PyTorch, REST APIs, FastAPI, Git, Bash, Docker, CI/CD (GitHub Actions), AWS
- **AI/Agents:** Claude Code, Codex, MCP, LangGraph
- **Finance:** CFA Level I (2022), Bloomberg Terminal

## EXPERIENCE

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### Royal Bank of Canada (RBC) *Quantitative Research Intern*

11/2024 – 05/2025

- Embedded with 10 CAD/AUD/FX traders as primary technical liaison during live market hours, triaging issues across data feeds, Excel tooling, and performance bottlenecks to minimise trading disruptions.
- Scoped requirements with AUD desk traders, built a VBA blotter system integrating Bloomberg API and proprietary data sources to track PnL and risk metrics, cutting calculation time by 50% while consolidating 20+ tabs to 12.
- Researched cubic spline interpolation methods for interest rates curve construction, delivering technical presentation to APAC senior traders on tradeoffs between risk locality, pricing accuracy, and curve smoothness.
- **Received full-time offer to join APAC Interest Rates Quant team.**

### Kpler (Commodities Intelligence Startup) *Market Data Analyst*

08/2021 – 08/2023

- Owned the coal, iron ore & metals data platform end-to-end for 50+ global clients: gathered requirements, prioritised backlog, wrote specs, and coordinated Engineering and Data Ops through full delivery lifecycle.
- Diagnosed and resolved production data issues live on client calls, feeding insights back into backlog prioritisation and product improvements — the primary technical point of contact for client escalations.
- Led platform expansion into new trading regions: engineered and deployed web scrapers and ETL pipelines (Python, REST APIs) capturing OCR bills of lading, port/customs API feeds, and broker data.
- Partnered with Data Science team to scope and deliver Random Forest models for commodity prediction; curated training datasets that improved grade and volume prediction accuracy by over 20%.
- Built automated Python validation system comparing Kpler data against third-party sources, eliminating 2 man-days of manual QA monthly.

### Government of Singapore Investment Corporation (GIC) *Project Management Trainee*

10/2020 – 07/2021

- Led assessment of AI, Blockchain, and RPA technologies to develop a 5-year tax technology roadmap; managed external consultants to deliver automated travel tracking system for global tax compliance.

### Rolls-Royce *Customer Management Intern*

09/2017 – 02/2018

- Managed the entry-into-service of RR Trent engines across 7 APAC airlines, coordinating multi-country stakeholders to streamline procurement pipelines for on-time delivery.