

HANS HUANG

AI & Data Engineer | Intelligent Automation

Portfolio: <https://www.hanscareerbot.com/>

Auckland, New Zealand | 022 410 9280 | hanshuang2906@gmail.com | New Zealand citizen | Full driver license

PROFESSIONAL PROFILE

AI and data practitioner who has completed the requirements for a Master of Artificial Intelligence with First Class Honours, combining hands-on Python, SQL and ELT project work with over four years of professional engineering experience in New Zealand. Built a PostgreSQL and Airflow pipeline, machine-learning models, RAG systems and AI automation tools that translate real-world requirements into working solutions. Brings analytical problem-solving, disciplined testing, traceable documentation and stakeholder communication to data pipelines, applied AI and intelligent automation.

TECHNICAL AND TRANSFERABLE SKILLS

- **Data engineering:** Python, SQL, PostgreSQL, REST API and JSON ingestion, ELT pipelines, staging and core schemas, Apache Airflow, Azure Data Factory, Dataflows, Azure Synapse Analytics, Azure Databricks, Microsoft Fabric, Power BI, Docker Compose, pytest and GitHub Actions.
- **Machine learning and analysis:** Pandas, NumPy, scikit-learn, PyTorch, data analysis, preprocessing, model development, MATLAB, R and Microsoft Excel.
- **Generative AI and automation:** Natural language processing, LLMs, RAG, AI agents, prompt and instruction design, output evaluation, chatbots, document-processing workflows and intelligent-automation prototypes.
- **Software delivery and deployment:** Requirements clarification, process mapping, solution design, automated testing, backend-to-frontend and API workflows, Vercel, Azure and AWS deployment, and iterative delivery.
- **Quality and documentation:** Data-quality checks, technical reports, design documentation, testable workflows, traceable decisions and structured problem-solving.
- **Stakeholder communication:** Requirements capture and coordination with clients, councils and contractors; clear explanations for technical and non-technical audiences; fluent English and Mandarin.

PROFESSIONAL EXPERIENCE

AI Developer (Self-employed) | Auckland / Remote

Jun 2025 - Present

- Clarify client and domain requirements and translate them into practical AI and automation prototypes.
- Develop construction-focused checking applications that identify discrepancies between foundation calculations and geotechnical reports and verify bracing consistency across plans and calculations.
- Build applied tools including an image-to-Excel automation workflow, a web-based AI chatbot, an automated motel call receiver and LLM-enabled robotic-arm systems.
- Use Python and AI libraries to integrate model capabilities with web and application workflows; deploy applications using Vercel and AWS, then test and iterate based on user requirements.

Structural Engineer | CCG Engineers

Mar 2022 - Dec 2024

- Designed structural systems for standalone and terraced residential buildings, maintaining accurate calculations, drawings and supporting documentation.
- Captured client requirements, revised designs in response to feedback, and communicated technical decisions clearly.
- Coordinated with local councils on building consents and resolved requests for information through traceable technical responses.
- Completed site inspections and construction monitoring, identifying issues and supporting practical resolution with project teams.

Graduate Structural Engineer | Kirk Roberts Consulting

Mar 2021 - Jan 2022

- Supported residential structural design, including standalone houses, retaining walls and swimming pools.
- Prepared technical documentation and completed site inspections while working within New Zealand engineering standards and project procedures.

Graduate Structural Engineer | DDL Homes

Jun 2020 - Dec 2020

- Produced structural designs and drawings for standalone homes, terraced developments and walk-up apartments.
- Prepared building-consent documentation and carried out inspections of designed structural components.

SELECTED AI AND DATA PROJECTS

- **AI interaction prototypes:** Built a web chatbot, an automated motel call receiver and LLM-enabled robotic-arm systems; developed the call receiver and robotic-arm solutions as MVPs, refining them through model testing and functional validation.
- **RAG research-support system:** Built a retrieval-augmented generation system to surface relevant information and support a Marsden Fund application through a structured retrieval-and-review workflow.
- **Image-to-Excel workflow automation:** Built a tool that converts information from images into structured Excel templates, turning a manual process into repeatable extraction, transformation and formatting steps.
- **Agent-assisted structural checking applications:** Developed agentic tools that encode domain rules to identify discrepancies between foundation calculations and geotechnical reports and verify bracing consistency across plans and calculations.
- **YouTube Data ELT pipeline:** Built an ELT pipeline with Python, SQL, PostgreSQL, Airflow and Docker to ingest API data, transform staging and core schemas, run quality checks and automate tests with GitHub Actions.
- **Pipeline-defect classification:** Completed a Master's research project using underground CCTV data to classify pipe defects through data analysis and machine-learning methods.

EDUCATION

Master of Artificial Intelligence - First Class Honours | University of Auckland **2025 - 2026**

- **Relevant studies:** Applied machine learning and deep learning; natural language processing; AI systems architecture and agentic systems; responsible AI and ethics; AI strategy and management; and applied AI research.

Bachelor of Engineering (Honours) - Civil Engineering | University of Auckland **2016 - 2019**

- Second Class Honours, First Division; degree awarded in 2020.
- **Relevant study:** Mathematical modelling, project and innovation management, engineering design, research and capstone projects.

ADDITIONAL INFORMATION

New Zealand citizen | Full driver license | English and Mandarin (spoken and written)

Engineering domain tools: AutoCAD, Revit, RISA-3D, SAP2000, Multiframe and Mathcad