



Danny Huang

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Professional summary

Full-stack developer currently working as a **Cloud Engineer at National Australia Bank** with a background in **Electrical Engineering specialising in Machine Learning**. Built and deployed **multiple ReactJS web application** from **scratch to production** for NAB bankers utilising AWS services. Heavily involved as a **Quantitative Trader** hobbyist developing **Recurrent Neural Network models** for predictive analysis.

Education

The University of Melbourne

Melbourne, VIC, Australia

M.Eng, Major: Electrical Engineering, specialising in Optimisation and Machine Learning

Jan 2019- December 2020

- WAM: 81.6% , First Class Honours
- Thesis: Optimal path-planning/following for Autonomous Vehicles using Partial Environment Information
- Award: - 2nd-place People's Choice Award. (/182 Final Year teams)
- 3rd-place Road to Endeavour Award. (/182 Final Year teams)

B.S, Major: Electrical Engineering

February 2016-December 2018

- WAM: 76.1% , Second Class Honours Division A

Exchange Program

Los Angeles, USA

University of California, Los Angeles

September 2017-June 2018

- Technical GPA: 3.12

Work Experience

National Australia Bank

• Software Engineer – Business Lending

01/08/2021 - Present

- Tech Lead on a 2 year customer-facing project supporting 28 developers.
- Mentor 3 in-house junior engineers on full-stack development and DevOps.
- Mentored external contractors (Accenture & DXC) NAB-specific UI development.
- Full-stack web application development using Backend For Frontend(BFF) alongside DevOps role and Unit Testing using ReactJS, Typescript, Javascript ES6, GraphQL, PostgreSQL, Jest, Enzyme.
- DevOps Infrastructure work connecting application to securities and deployment onto AWS. Serverless and scalable solutions (Eg. EC2, ECS containerisation and or, RDS, DynamoDB, Lambdas, ASG).

• Junior Software (Cloud) Engineer – Business Lending

11/01/2021 - 01/08/2021

- Built 3 production ready web applications used by all bank branches in Australia.
- Setup CI/CD Jenkins pipeline infrastructure for app deployment integrating quality checks such as SonarQube, Checkmarx and Deputy.
- Completed internal 2 week hackathon building app on house price evaluation using Machine Learning (Convolutional Neural Network) based on current housing market features (No. Rooms, carspace, proximity to facilities etc.).

Jacobs Engineering

26/11/2019 - 21/02/2020

• Undergraduate Electrical Engineer

- Assisted in a 200k life extension project for V/Line in data analysis for fault finding and providing recommendations to the client.
- Worked on a \$600 billion dollar project for Victorian Government 2050 metro vision procuring rolling stock(trains) in a consortium of 4 engineering consultancies and government agency.
- Time-managed 4 concurrent projects ensuring deadlines are met.
- Prepared 5 final reports for clients in a span of 3 months.
- Independent on site-visit to client to inspect project progression and updates.

Commonwealth Scientific and Industrial Research Organisation (CSIRO)

19/11/2018 - 01/03/2019

• Vacation Student Researcher

- Develop & test capacitive sensing method to measure properties of mineral solution within the flotation unit.



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Technical Skills

Frontend Tech Stack

- JavaScript, Typescript, ReactJS, React Native, HTML, CSS, Jest, Enzyme, React Testing Library, Node.JS

Backend Tech Stack

- Python, Java, C, SQL, NoSQL, DynamoDB, PostgreSQL, EC2, S3, GraphQL, Adobe Analytics, Google Analytics, PEGA CRM, ROS

DevOps Tech Stack

- AWS services suite, Jenkins, Docker, Kong, Nginx

Data Analytics stack

- Pandas, NumPy, Jupyter Notebooks, Matplotlib, MATLAB, TensorFlow, Sagemaker, Keras

Hardware

- FPGA, PCB Design, Soldering PCB & Dev board, Microchip SAM C MCU, Arduino Uno, Raspberry Pi

Amazon Web Services (AWS) Certification

- Machine Learning – Specialty
- Solutions Architect - Associate
- Cloud Practitioner

Project Design

Building a ReactJS App hosting on AWS – Workshop

2021 working at NAB

- Designed and taught a ReactJS workshop to University students teaching them how to create web app and host on AWS using AWS services specifically S3, DynamoDB, Elastic Load Balancer, Elastic Container Service.

Optimal path-planning for autonomous vehicles using partial information

Capstone 2020

- Develop novel advanced control strategies (via machine learning) for autonomous driving (minimise lap time, power consumption, and guarantee collisions avoidance) with partial information of the environment.
- Real-time collision avoidance for static and dynamic obstacles using Mixed-Integer Quadratic Programming.
- Object Identification
- Designed novel optimisation-based controller using SLAM (Simultaneous Localisation and Mapping) that ensures real-time optimal car maneuvering, speed, and safety.

Algorithmic Trading U.S Market Equity Strategy

Year-long Personal Project 2020-2021

- Research/develop/test trading strategies using signal indicator and Neural Network models. Backtesting strategies on BackTrader platform in Python with a sharpe ratio averaging 2.4.

AI Planning for Autonomy

Semester 1 2020

- Developed full autonomous agent with 3 other students for Pac-man game that ensures completion based on time/score/ghost avoidance.

Measuring froth depth in flotation units

Summer Internship 2019

- Research Assistant**-develop & test capacitive sensing. **Schematic design & PCB layout** for test. **Written Report** describing work and outcomes. **Verbal presentation** describing results and experience.

Controller for Self-driving Car

Spring Quarter 2018

- Designed a controller that allows a model car to adjust its position relative to its projected position in order to stay in track (**lane keeping**).

Speech Classification

Fall Quarter 2017

- Designed a deep neural network algorithm that detects, trains, and predicts audio signal speech recognition of male/female voices with **99.4% accuracy**.

Leadership & Extra-Curricular

Coffee Appreciation for Enthusiasts – Social Media Director

09/2019 – 12/2020

- Managing society's social media accounts with weekly posts on events and meetups whilst directing 2 supporting officers.



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References

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Agustian

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