

Rhys Compton

MACHINE LEARNING RESEARCH · FULBRIGHT SCHOLAR · COMPUTER SCIENCE MAJOR

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Education

New York University, Courant Institute

Manhattan, New York City

M.S. IN COMPUTER SCIENCE, GPA: 3.8/4

Jan 2021 - Dec 2022 (Expected)

- **Scholarships:** Fulbright NZ Science and Innovation Scholarship; NYU GSAS TIP Award
- **Relevant Coursework:** Machine Learning for Healthcare; Fundamental Algorithms; Bioinformatics

University of Waikato, Faculty of Computer Science and Math

Hamilton, New Zealand

B.E. (FIRST CLASS HONS) IN SOFTWARE ENGINEERING, GPA: 8.2/9

Feb. 2016 - Dec. 2019

- **Scholarships:** FCMS Dean's Award of Excellence (Top 10 students per cohort); Taught Postgraduate Scholarship (Semester A & Semester B)
- **Relevant Coursework:** Advanced Machine Learning; Information Visualisation; Extremely Parallel Programming; Artificial Intelligence

Publications

MEDCOD: A Medically-Accurate, Emotive, Diverse, and Controllable Dialog System

ML4H 2021

CURAI HEALTH

Dec 2021

- [Paper Preprint](#); [Poster](#);

Embedding Java Classes with code2vec: Improvements from Variable Obfuscation

MSR 2020 (colocated with ICSE 2020)

UNIVERSITY OF WAIKATO

May 2020

- [Conference Paper](#); [Project Github](#); [Elevator Pitch \(1 min\)](#); [Full Talk \(15 min\)](#)

Experience

Machine Learning Research Intern

Palo Alto, CA, USA

CURAI HEALTH

June. 2021 - Sept 2021

- Improved human-ness of medical chatbot by combining DL-based natural language generation with medical domain expertise.
- Explored novel GPT-3 prompting methods for data synthesis, increasing NLG variation.
- Utilised pre-trained SBERT and PCA to embed medical conversations, enabling an accurate emotion classifier despite limited data.
- Full technical paper accepted at top-tier machine learning healthcare conference (ML4H 2021).

Machine Learning Intern

Hamilton, New Zealand

REZARE SYSTEMS

Nov 2019 - Feb 2020

- Used Faster-RCNN to rapidly deliver a robust object-detection-based animal counting application, reducing errors for saleyard workers ([video](#)).
- Analysed viability of synthetic data, utilising Weights and Biases to track experiments.
- Generated time savings of 40% by using Docker and GitHub Actions to develop automated model deployment pipeline.
- Migrated project to Tensorflow-lite, allowing it to run in real-time on consumer laptop with Google's Coral USB, removing reliance on cloud GPUs.

Machine Learning Research Intern

Cambridge, New Zealand

ROCKETSPARK

Nov 2018 - Feb 2019

- Designed and implemented a GPT-based NLG SEO-optimisation tool to enhance customer website search rankings and site traffic, enabling automatic generation of SEO-relevant website content. Led project from initial scoping to model deployment.
- Scraped and processed custom dataset of over 400k webpages with Python and BeautifulSoup, enabling a *controllable* NLG model.
- Leveraged Docker and Google Cloud Run to deploy model as auto-scaling API.

Research & Teaching Assistant

Hamilton, New Zealand

UNIVERSITY OF WAIKATO

Feb 2020 - Nov 2020

- Implemented *Shrunken Centroid* classifier and *ScoreCAM* saliency map method for *open-source* ML package, improving CNN interpretability.
- Designed and built a *Model Zoo*, enabling package users to easily use pretrained models for training and inference.
- Acted as teaching assistant/grader for graduate-level machine learning class - COMPX521: Advanced Machine Learning.

Software Engineer Contractor

Hamilton, New Zealand

COMPTON TECH

Feb 2020 - Jan 2021

- Built C#/NoSQL application as sole SWE contractor. Managed process from customer planning through to timely delivery and documentation.

Skills

Languages Python · Java · SQL · Javascript · C# · C

Frameworks & Environments HuggingFace · PyTorch · Linux · Weights & Biases · AWS · GCP · Docker · Keras · Vue.js