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<b>Data Science Fields</b>	Machine Learning, Optimization, Statistical Models, Bayesian Stats, Experimental Design
<b>Languages</b>	Python, SQL, Julia, R, C
<b>Dev Tools</b>	Git, Linux, AWS, $\LaTeX$
<b>Python DS packages</b>	Pandas, Numpy, Scikit-learn, PuLP, Bokeh
<b>ML and Large Data tools</b>	PyTorch, TensorFlow, Dask, Numba, Dagster, Ax/BoTorch, Segmentation Models

### EXPERIENCE

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**Head of Data Science** **Mar 2022 — Current**  
*Climax Foods (AI Plant-Based R&D + CPG)* *San Francisco Bay Area, CA*

- Leading novel DS approach to food formulation; applying optimization/ML techniques including new feature and fitness functions development, and directing org experimental design to improve product outcomes, with 60% reduction in time and resources spent in product development and R&D, and 30% improved outcomes measured on analytic equipment and sensory validation.
- Leading global collaboration to formulate plant-based Mini Babybel ([link](#)) using ML; including developing models, generating recommendations, and coordinating a team of 20 food scientists, software engineers, protein scientists, chemists, and technicians.
- Developing pipelines to automate the processing of scientific instrument data, cutting data collection times by 50%.
- Developing and deploying custom data models and web apps to capture prototyping and measurement data, causing 10x increase in capture of structured data across the company.

**Data Scientist** **Aug 2021 — Jan 2022**  
*Fireball Information Technologies (Computer Vision Wildfire Detection)* *New York, NY*

- Architected core deep learning computer vision models, pipelines and data selection in wildfire detection system, designing a way to bring down both false negative and false positive rates in critical, live system.
- Trained and productionized semantic segmentation models with transfer learning, applying state of the art research across model architecture, training methods, and hyperparameter optimization.

**Quantitative Researcher** **Jul 2020 — Aug 2021**  
*Akuna Capital (High-Frequency Trading)* *Sydney, Australia*

- Improved existing strategy profits up to 20% using statistical time-series research into high and medium frequency trading signals across Hong Kong, Korea and Crypto markets.
- Led a project from hypothesis through to production to develop a trading filter algorithm based on machine learning classifiers incorporating contextual feature sets; filtering out 10% of bad trades.
- Ran large scale optimizations of algorithm parameterization across years of time-series data; designing backtesting fitness functions and using iterative global optimization and machine learning approaches to double parameterization quality in production.
- Productionizing ad-hoc research models into continuous automated daily runs, resulting in 14x more frequent updates; producing better trading performance and allowing for more granular further research.
- Refactored local pandas-based data analysis on dozens of TBs to efficient pipelines using Dask over a 500+ node AWS cluster, reducing iteration time from 4 hours to 10 minutes, and increasing look-back from 1 month to 2 years.

**Blockchain Graph Structure Research** **Jul 2018 — Oct 2019**  
*University of Melbourne* *Melbourne, Australia*

- Research into developing and adapting techniques from machine learning to infer the topology of the peer-to-peer network underlying Bitcoin; and its implications into Bitcoin's pseudonymity properties.
- *The Bitcoin P2P Network Topology: a Review of Inference Techniques and Machine Learning Approach* available [here](#).

**Teaching Assistant** **Mar 2019 — Oct 2019**  
*Melbourne Business School* *Melbourne, Australia*

- Designed and led seminars in the MBA program for topics in Integer Linear Programming, Optimization and Decision Making.

### SIDE PROJECTS

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**Co-founder** **Mar 2020 — Present**  
*Couchers.org (Free couch surfing social network)* *San Francisco Bay Area, CA*

- Running an open-source couch surfing platform to out-compete legacy companies and improve outcomes for over 42,000 users.
- Forming a 501(c)(3) nonprofit organization, creating and executing global strategy for internal workflow and external growth.
- Recruiting and managing team leads in fields including software development, marketing, UI/UX and graphic design.

### EDUCATION

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**Master of Science — Statistics, Operations Research and Applied Probability**, *University of Melbourne*  
**Bachelor of Science — Applied Mathematics and Operations Research**, *University of Melbourne*