

Ty Andrews

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Driven data scientist and engineer seeking technical roles in applied data science. Experienced in developing innovative solutions **resulting in 3+ granted patents and attracting \$7M+ in external investment**. More than 5 years experience working with high performance organizations, such as **Tour de France cycling teams, Olympic teams, and a multinational premium appliance company**, which has developed an ability to navigate the ambiguous nature of fast paced technology development while balancing technical, customer and business goals.

WORK EXPERIENCE

Data Scientist & Engineer

June365 – Internal Startup @ Fisher & Paykel Technologies
Vancouver, BC

Part Time During Masters: Sept 2022 – Present
Full Time: Oct 2020 – Aug 2022

- **Improved 120+ users' functional fitness by an average of 15% in 3 months** with zero injuries and an average workout satisfaction of 4.4/5 by leading the performance and analytics product teams.
- **Developed, validated, and monitored multiple machine learning models** using scikit-learn and MLflow to turn individuals' performance into generalizable results, which enabled monitoring & validation for Series A investors.
- **Delivered individualized content to 120+ users at 6 companies by collaborating with sales and marketing** to implement a user clustering solution with scikit-learn.
- **Secured \$7M Series A investment** by working side by side with the CEO and senior leadership to coordinate and run investor demos in China, New Zealand & the United States.

Product Design Engineer

Fisher & Paykel Technologies – Innovation & Concepts Team
Auckland, NZ

Sept 2019 – Sept 2020

- **Improved rangehood testing quality by 10x over discrete sensor readings and saved 10+ hours a week of manual inspection** by building a computer vision tool for quantifying range hood extraction performance from videos using OpenCV optical flow.
- **Lead and mentored 5+ projects** with new grads/interns using computer vision (OpenCV, YOLO) and machine learning (TensorFlow, scikit-learn) to tackle hard problems such as cooktop fire detection which resulted in interns returning full time after graduation.

Design Engineer

Sport Group – 4iiii Innovations Inc.
Calgary, AB

Jan 2018 – Aug 2019

- **Worked with Tour de France professional cycling teams** Bora Hansgrohe & Israel Startup Nation to verify our product accuracy and reliability for their race season.
- **Mitigated ~\$400k in losses** by preventing a recall of ~8k units through teamwork with operations and clients.
- **Reduced product testing time by 80%** by designing and validating improved test protocols for manufacturing.

Mechanical Design Engineer

Motus Design Group
Victoria, BC

May 2016 – Dec 2017

- Partnered with the **Canadian Olympic speed skating team** to design a force measurement speed skating blade
- **Collaborated with the Canadian Olympic bobsled and kayak teams** to build high accuracy measurement modules containing GPS and inertial measurement units to quantify athletes' performance.

EDUCATION

Master of Data Science - University of British Columbia (UBC)

Aug 2022 – July 2023

Vancouver, BC

- Professional post graduate program facilitated by the UBC Computer Science & Statistics departments
- Lead a team of 4 data science class mates and placed top 3 in the UBC Learning Analytics Hackathon – Oct 2022

BEng. in Mechanical Engineering – University of Victoria

Sept 2011 – July 2017

Victoria, BC

- Secured a patent from honors thesis project in partnership with Motus Design Group
- Completed 16 months of co-op work terms, 4 months – Motus Design Group, 12 months – TransCanada Pipelines
- Specialization in Computer Aided Design & Mechatronics

SELECTED PROJECTS

MetaExtractor: Automated Research Article Data Extraction with NLP for the Neotoma Paleo-ecological Database

UBC Master of Data Science Capstone Project - Team of 4, 8 weeks – 2023

- The project aimed to make previously missed paleo-ecological research data from around the world available to researchers to better study climate change using the fossil data.
- Responsible for training custom named entity recognition (NER) models with Hugging Face ultimately selected by the project sponsor for deployment.
- Dockerized and deployed final NER model for inference on newly published research articles.
- Open-Source Repository & Demos: <https://github.com/NeotomaDB/MetaExtractor>

Technologies Used: Python, NLP, Hugging Face, Docker, Azure Machine Learning, Label Studio, PostgreSQL

Strava Snooper: Using 10+ Years of Data from Strava.com to Maximize Engagement and Target Potential Subscribers

Personal Project - 2021/2022

- To understand and maximize athletes engagement with followers, trained a model to predict how many kudos (likes) their next activity will get and analyzed contributing factors increase engagement
- Set up a pipeline to extract my Strava data from the Strava.com API and import it into Google BigQuery
- Built a demo website with Plotly Dash and deployed with Google App Engine - www.stravasnooper.com
- Deployed the kudos prediction machine learning model to a FastAPI endpoint - ml.stravasnooper.com

Technologies Used: Python, Plotly Dash, Google BigQuery, SQL, FastAPI, MLflow, XGBoost, Docker, Google Cloud Run

PULSE – UBC Learning Analytics Hackathon: Real Time Student Engagement Monitoring for Professors

Oct 2022

- Combined multiple website data streams like click data and discussion boards into a single metric for professors to identify students who are less engaged than peers and may need help.
- Placed top 3 and presented solution to senior UBC Learning Analytics team

Technologies Used: Python, R

Technical Skills:

- Languages: Python, R, SQL
- Machine Learning: Scikit-Learn, XGboost, MLflow, HuggingFace, TensorFlow, PyTorch
- Development: Git/Github/Gitlab, Agile/Jira, Continuous Integration Continuous Deployment (CICD), Confluence
- Cloud: Google Cloud Platform, BigQuery, Looker Studio, Cloud Run, Vertex AI, Dataflow, Azure ML, Cosmos DB