Ethan **Callanan**

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Work Experience

Director of Research - QMIND
Kingston, ON
Sept. 2020 - Present

PYTHON, PYTORCH, TENSORFLOW, SPACY, NLTK, NUMPY, PANDAS, MATPLOTLIB

- Managing 4 research projects; Previously managed **5 client projects** and 1 internal design project
- Leading development of a **brain computer interface** using an EEG and ML classification
- Advising project managers on technical decisions and team management operations
- Created onboarding packages and technical training resources on ML techniques, and **lectured to >60** new members

Software/Data Engineer - Praxis Pioneering
Miami, FL
May. 2022 - Aug. 2022

PYTHON, JUPYTER, PANDAS, SQL, DBT, BIGQUERY, POSTGRESQL, TIMESERIES FORECASTING

- Automated data ETL pipelines using dbt and BigQuery SQL for large datasets **(>10 trillion rows)**
- Performed data cleaning and feature engineering for a timeseries forecasting model, leading to **$20M** in savings for the client (a multinational music company)
- Designed the database architecture and built a CRUD API for an internal application
- Excelled in the fast-paced, initiative driven environment, requiring competent work in many roles

Head of Data Science - Arke News
Kingston, ON
Dec. 2021 - Aug. 2022

PROJECT MANAGEMENT, NLP, BERT, BACKEND DEVELOPMENT

- Led development of NLP classification models for news article political bias
- Managed a team of 5 ML developers, providing guidance on core model and data decisions
- Built the API for the news website to retrieve and modify article and user data

Research Intern - Mu Lab
Kingston, ON
May. 2021 - Sept. 2021

PYTHON, TARSKI, PROPOSITIONAL LOGIC, PDDL, LIBRARY DEVELOPMENT

- Presented at the **KEPS workshop at ICAPS 2022**, and co-authored the accompanying research paper
- Developed the first comprehensive library for action model acquisition from state trace data
- Designed the intuitive, feature-rich library API and core data structures
- Implemented **complex theoretical algorithms** by interpreting research papers and translating into code
- Created powerful data visualizations for trace and model understanding
- Awarded an Undergraduate Student Research Award

Full-Stack Developer - Royal York Property Management
Toronto, ON
May. 2020 - Oct. 2020

TYPESCRIPT/JAVASCRIPT, REACT, GRAPHQL, MYSQL, NODE.JS, AWS, DOCKER

- Developed a web-application to modernize the client experience and internal business practices
- Led backend development consistently ahead of schedule
- Performed a frontend overhaul, which involved writing 8000+ lines of (approved) production code in 2 weeks

Projects

Attention Detection for Virtual Assistant Activation
Machine Learning

PYTHON, PYTORCH, TORCHVISION, OPENCV, NUMPY, CNN, MTCNN

- Developed **computer vision models** for face detection and human attention classification
- Led a team of 3 to build a web app and demo virtual assistant, and integrate the models with the assistant
- Presented and demoed the project at CUCAI 2021
- Authored an **award winning research paper**, published through the conference proceedings

Praxis Timeseries Interface
Software Development

PYTHON, JUPYTER [NOTEBOOKS/LAB/KERNEL], PANDAS, PLOTLY, DASH, DARTS

- Designed and built a majority of the core functionality for Praxis' **flagship product**
- Refactored hundreds of lines of code, **doubling the speed of development** afterwards (measured in tickets completed per week of similar difficulty)
- Debugged a critical issue in complex asynchronous code interfacing with the IPykernel

Education

Queen's University
Kingston, ON
Sept. 2019 - Present

BACHELOR OF COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE

- **4.07 / 4.3 GPA** | Notable courses: Artificial Intelligence, Reinforcement Learning, Neural and Genetic Computing, Data Analytics, Algorithms, Data Structures, Systems Neuroscience, Probability and Statistics
- Awarded the Queen's University **Excellence Scholarship** and the Dean's Honour List (2019-2022)
- **Teaching assistant** for Intro to Computing Science and Logic for Computing Science