

Kai Ferrall

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SKILLS

Languages — Python 3, Node.js, JavaScript/HTML5/CSS3, Java, C

Frameworks/Libraries — Express, React, Redux, OpenCV, NumPy, pandas, jQuery, Junit

Tools/Other — Jira, MongoDB & MySQL, Redis, Google Cloud & AWS, API creation/integration, microservice design/dev, regex

EXPERIENCE

ecobee — Software Engineer Intern

05/20 - present

Working on automated RMA system, estimated savings of **\$2 million per year**.

Developed drop-ship data pipeline with **GCP & SFTP** to reduce error costs, processing **~ 200 files per day**.

Pitch Development — Full Stack Web Developer

05/19 - 09/19

Developed generalized media microservice, saving **~ 40 hours** of manual work.

Created cache service with Redis, on average **saving 176ms per authenticated request**.

PROJECTS & WORK

Viral Disease Model, Opinion Dynamics Model

2018

In a team of 4 developed a GUI and model, simulating agent movement and viral disease infection.

Agent infectivity modelled with opinion dynamics.

Web scraped 10 year historical data to test model accuracy.

MATLAB, Python, Matplotlib, pandas

source

HeadtoHead.ca, CMS Subscription Platform

2019

Developed **full admin and user authentication system** along with subscription platform using Stripe API.

Application has been **live with subscribers for 1.5 years**.

Express, React + Redux, MongoDB, Stripe API

private github live application

CloudTect, Object Detection Model

2019

For hackathon, in team of 2 developed object detection model and web cam streaming server.

Final model detection accuracy of **96%**.

Yolo3D, OpenCV, Machine Learning, Flask, React

github

Feedback, Web App

2017/2018

Developed anonymous live feedback platform, to allow my professors to garner feedback more easily.

Included live poll results and graphics, unique code for form that closes after set time period.

Used **natural language processing on comments**, to classify as positive or negative.

Express, React + Redux, MongoDB

github live application

EDUCATION

Queen's University — BAsC. Applied Mathematics and Computer Engineering (3.1 GPA)

2017 - 2022 (internship)

Engineering Society Software Development Team — Team Lead

Sexual Assault Center of Kingston — Android App (class project)

EngLinks — Engineering Tutor

Relevant Course Work

Data Structures, Digital & Embedded Systems, Control Theory, Signal & Systems Theory, Calculus 3, Computer Architecture, Probability 1 & 2, Linear Algebra 1 & 2, OOP for engineers.