Kai Ferrall

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Languages – Python3, NodeJS, JavaScript/HTML5/CSS3, Java, C, Assembly (NIOS 2)
Frameworks/Libraries – React, Express, OpenCV, NumPy, Pandas, jQuery, Redux, Junit
Tools/Other – Jira, Redis, Google Cloud & Amazon Web Services, regular expressions, Heroku, Git, API integration/development, mobile optimization, full stack web development, microservice design/development

EXPERIENCE

ecobee – Software Engineer Intern. *Toronto, ON.* 05/2020 – current
Architecting and developing data pipelines. Integrating complex systems and pipelines with Google Cloud (GCP). Created an automated system monitoring drop shipping program data with Python and GCP.

Pitch Development – Full Stack Web Developer. *Kingston, ON.* 05/2019 – 09/2019
Architecting and developing full stack web applications. Integrating with complex API's to provide advanced features such as online subscription services. Working with designers and attending client meetings to develop specifications. Developed a generic media microservice to provide video and image functionality to apps.

Englinks – Engineering Tutor. *Queen's University at Kingston, ON.* 05/2019 – 04/2020
Tutoring fellow engineers in C programming, calculus and linear algebra. Covering topics such as pointers, and basic algorithms.

PROJECTS & WORK

Viral Disease Modelled via Opinion Dynamics. *Statistical Model Simulation, Project.* 2018
In a team of 4 used developed a statistical model and GUI in MATLAB to model the spread of viral diseases. Model consisted of simulated movement, an infection metric varying with agent's infectivity levels. Data was aggregated to use real world metrics within model. Model output was informatively displayed with Python.
[Python, MATLAB, Numpy, Pandas], [see website for source code]

Feedback. *Web Application, Project.* 2019
Created a web application for professors/presenters to garner feedback from audiences more easily. Presenters create a form within a topic and a random code is generated and distributed for audience members to fill out form. Live data and comments can be viewed by the presenter as answers are submitted. See Github for link to live application. [NodeJS, Express, React, MongoDB, Redux], [https://github.com/kaiferrall/FeedBack]

Portal.HeadtoHead.ca. *Web Application, Professional Work.* 2019
Created a custom content management system and media microservice for HeadtoHead.ca. Including custom subscription functionality through the Stripe API. Contained user and admin portals with full api and frontend authentication. [NodeJS, Express, React, MongoDB, Stripe API], [https://portal.headtohead.ca/]

Cloud Detect. *Object Detection Model, Project.* 2019
For a hackathon integrated and architected a machine learning Yolo3D model with a Flask web cam server. The server took client web cam video and streamed object detection model result to the client. [Python, Flask, machine learning, Yolo3D],
[https://github.com/kaiferrall/QHacks-Server]

EDUCATION

Queen's University. 2017 – 2021
Bachelor of Applied Science. Applied Mathematics and Computer Engineering
Relevant Courses. Data Structures, Digital Systems, Embedded Systems, Control theory, Signal & Systems theory, Calculus 3, Computer Architecture, Probability 1 & 2, Linear Algebra 1 & 2, OOP for engineers.