

## Education

**Systems Design Engineering (Co-op) - Economics Minor** • UNIVERSITY OF WATERLOO

Honours Bachelor of Applied Science - 2020

Courses: Data Structures and Algorithms, Digital Computation (C/C++), Software Design (OO Design), Human Factors in Design, Digital Systems

## Experience

**Dash Front End Intern Engineer** • PLOTLY

May 2019 – August 2019

- **Optimized** the Speck React component of dash-bio by **memoizing expensive operations and decoupling Speck component updates** from dash-bio with a debouncer and prop comparison functions to **maintain 60 fps** at all times running on reasonably powerful hardware
- **Made contributions** to the 3rd-party open-source library **ideogram.js** to fix issues such as **load race conditions, decrease frame times by over 26 ms** using layers to minimizing repaints on scroll, and draft a method to batch load large datasets to **prevent event loop blockage**
- On community request, **made dash-cytoscape responsive** by designing and implementing resize algorithms which automatically maintained the general size and position of the graph while accounting for any change in the browser window dimensions or aspect ratio
- **Evaluated 3rd-party plugins** for integration into dash-bio and dash-cytoscape by looking at compatibility, development time costs, and current needs, resulting in **2 new plugin additions**

**Front End Engineering Intern** • STACKADAPT

Sep 2017 – Dec 2017, Sep 2018 - Dec 2018

- Served as the primary developer responsible for **incorporating the Zendesk ticketing system**, improving service and reducing operational costs by streamlining communication between customers and account managers as well as within the company
- **Consolidated** Zendesk and StackAdapt **authentication using single-sign-on (SSO)** by integrating Zendesk API functions into the existing Ruby on Rails login logic to make navigation between platforms seamless
- **Developed UI components** using the Agile Scrum methodology for the **customer-facing platform SPA**, incorporating sound API design

**Front End Developer** • UNIVERSITY OF TORONTO

January 2017 – April 2017

- **Addressed community reported bugs** and **added significant features** to Cytoscape.js (~25,000 weekly NPM downloads) such as the ability to layer multiple background images in a single node, becoming the **2nd largest contributor** to the repository by lines of code
- **Validated and updated all 12 first-party Cytoscape.js extensions** for the 2.x to 3.x release containing breaking API changes
- **Developed, tested, and released** the open-source **pathway-commons** JavaScript library on NPM which provided a simple, intuitive, human-readable JavaScript interface for computational biologists and application developers to query the Pathway Commons REST API
- Investigated how researchers used biological pathway information to see if their workflow could be streamlined using automated tools

**Full Stack Developer** • PEEKAPAK INC.

May 2016 – August 2016

- Removed redundant back-end API calls and consolidated endpoints, **reducing load times from 3 seconds to 0.5 seconds** on average
- **Created a fully functioning REST interface** using the polyglot (Java, JavaScript) Vert.x framework to receive billing transactions using the Braintree service with the goal of replacing manual invoice and billing, improving customer experience and increasing efficiency

**Web Developer Intern** • ROGERS COMMUNICATIONS INC.

September 2015 – December 2015

- **Created an athlete headshot processing tool** which allowed images to be **validated eight times more efficiently** by providing a side-by-side comparison of old and new headshots and allowing images to be accepted or rejected using a UI, replacing manual file comparison
- **Devised a WordPress caching fail-safe** for sportsnet.ca (greater than 7,000,000 monthly page views) that **reduced downtime twelve-fold** in the event the back-end query servers go offline

**Junior System Analyst** • TEKVISION TECHNOLOGIES INC.

January 2015 – May 2015

## Projects

**Vehicle HMI System** • UNIVERSITY OF WATERLOO ALTERNATIVE FUELS TEAM (UWAFTE)

- **Constructed an infotainment framework** for the UWAFTE Chevrolet Blazer Competition Vehicle to serve current and future connected autonomous vehicle applications without compromising cabin refinement through intuitive interface design and beautiful aesthetics
- **Created and developed 4 interface applications** including an animated instrument cluster, built using Three.js with custom OpenGL shaders, designed using human factors engineering principles to enhance usability and safety on the road
- **Built and documented interfaces** for both back-end and front-end applications to connect to the framework, discouraging unnecessary cross-application interactions **using opinionated interface design** to promote modularity and reduce development costs

## Technical Skills

- Strong expertise with ES6 JavaScript, React, Bootstrap, Node, CSS/SASS, and Git SCM
- Familiar with Cytoscape.js, D3, Three.js, Express, jQuery, and MATLAB
- Prior experience with Java, Python, PHP, Ruby, C/C++, C#, AWS, MySQL and Oracle Relational Databases