

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 (UWAFST)

- **Constructed an infotainment framework** for the UWAFST 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 WebGL 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