

Manfred·Cheung

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Education

Honours Systems Design Engineering - Economics Minor • BACHELOR OF APPLIED SCIENCE

University of Waterloo - 2020

Experience

Dash Intern Engineer • PLOTLY

May 2019 – August 2019

- On community request, made dash-cytoscape responsive by designing and implementing a resize algorithm which automatically maintains the general size and position of the graph while accounting for any change in the browser window dimensions or aspect ratio
- 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 and increase performance by combining all ideogram diagram elements into a single layer to minimize browser repaints on scroll
- Evaluated 3rd-party plugins for integration into dash-cytoscape by looking at compatibility, development time costs, and current needs

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 login logic to make navigation between platforms seamless
- Developed reusable UI components for the internal React library and the customer service platform using good API design principles

Front End Developer • UNIVERSITY OF TORONTO

January 2017 – April 2017

- Fixed community reported bugs and added significant features to Cytoscape, a JavaScript graph theory visualization library used by FaceBook and Microsoft among many others, such as the ability to layer multiple background images in a single node
- Designed Pathway Search, an open-source web application which made the Pathway Commons biological pathways database searchable and viewable for biologists and researchers using the React/Bootstrap ecosystem
- Developed, tested, and released the pathway-commons JavaScript library on NPM which provides a simple, intuitive, human-readable JavaScript interface for computational biologists and application developers to query the Pathway Commons REST API

Full Stack Developer • PEEKAPAK INC.

May 2016 – August 2016

- Removed redundant backend 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 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 that reduced site downtime twelve-fold in the event the back-end query servers go offline

Junior System Analyst • TEKVISION TECHNOLOGIES INC.

January 2015 – May 2015

Projects

UWAFI Vehicle HMI System

- Constructed an infotainment framework for the UWAFI 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 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 encourage modularity and reduce development costs

Technical Skills

- Expertise with ES6 JavaScript, React, Bootstrap, Node, CSS/SASS, and Git SCM
- Familiar with Cytoscape, D3, Three.js, jQuery, and MATLAB
- Experience with Java, Python, PHP, Ruby, C++, C#, and MySQL