LIAM KOPP - PORTFOLIO

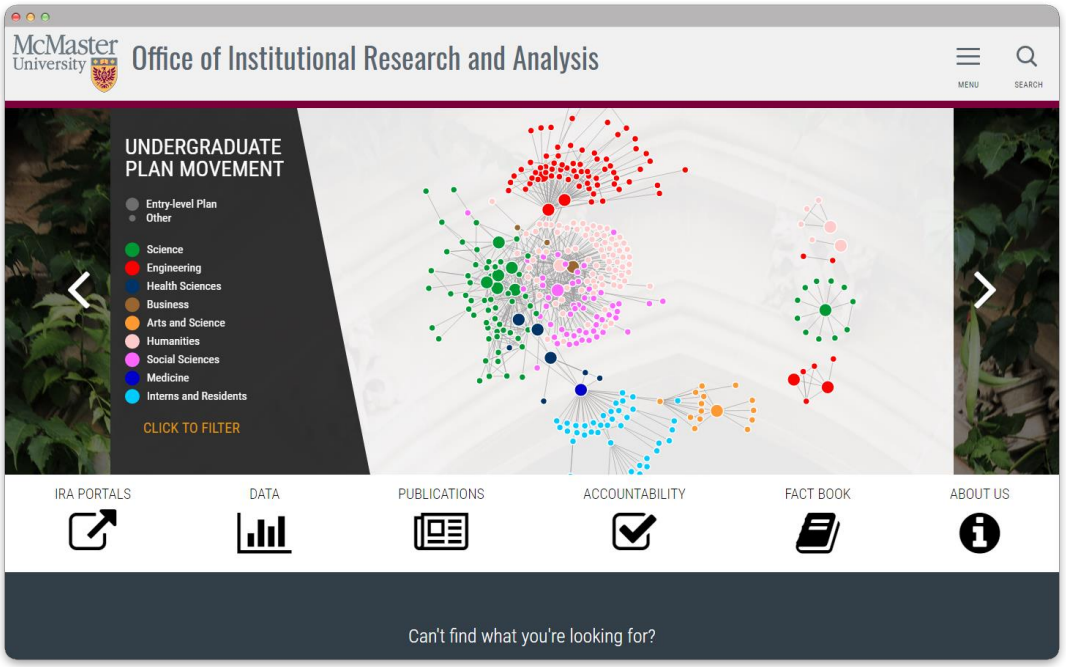
Contents

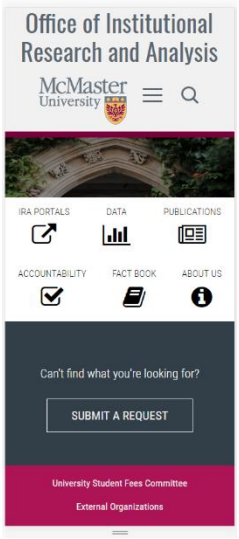
Office of Institutional Research and Analysis Website

2016

HTML, CSS, JavaScript, PHP

I designed and coded a new website for the Office of Institutional Research at McMaster. I used WordPress as Content Management System, and coded the rest using various CSS and JavaScript frameworks and libraries. The website features two data visualizations, archives of the office's publications (using AJAX to display different content), search functionality, and a custom PHP form for submitting email requests.



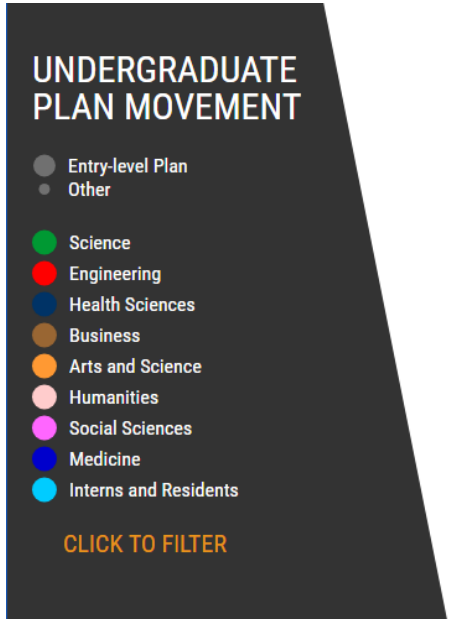


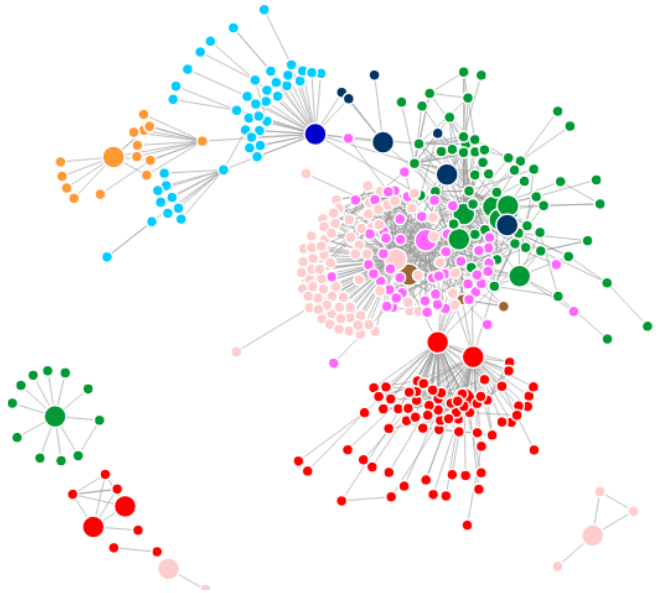
Data Visualization: Undergraduate Plan Movement

2016

JavaScript, HTML

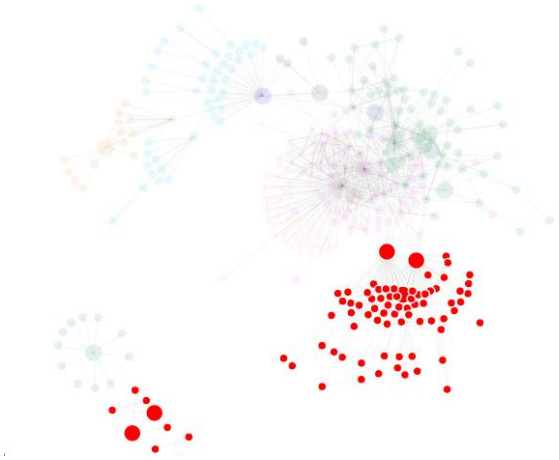
This visualizes the movement between all undergraduate plans or programs. Each node represents a different program. Each link between nodes shows that there has been a significant amount of transfer between the two programs. The different colours indicate faculty.

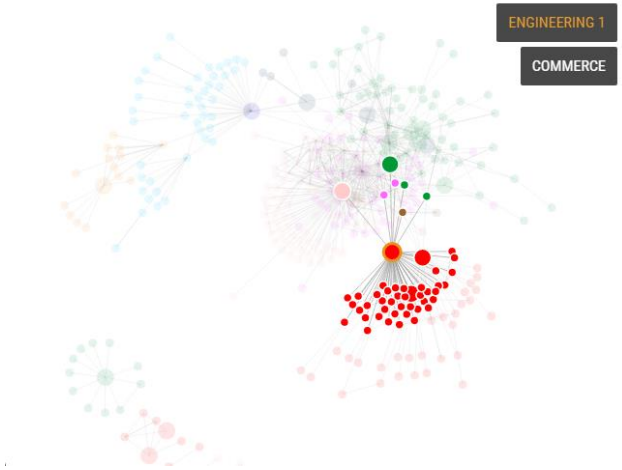


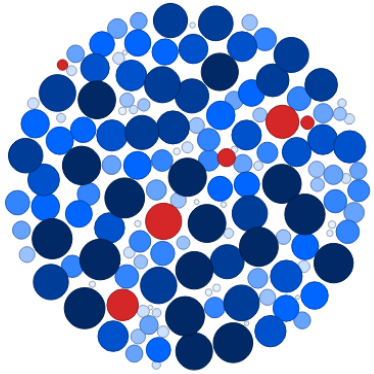


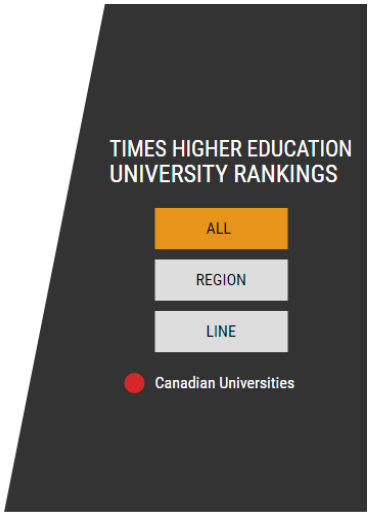
Filtered by Faculty

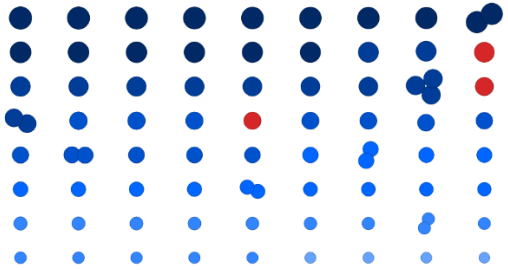
Program Selected

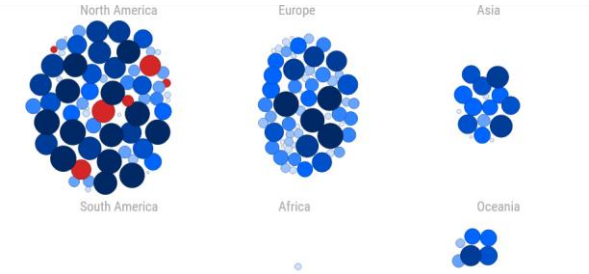












Data Visualization: University Rankings

2016
JavaScript, HTML

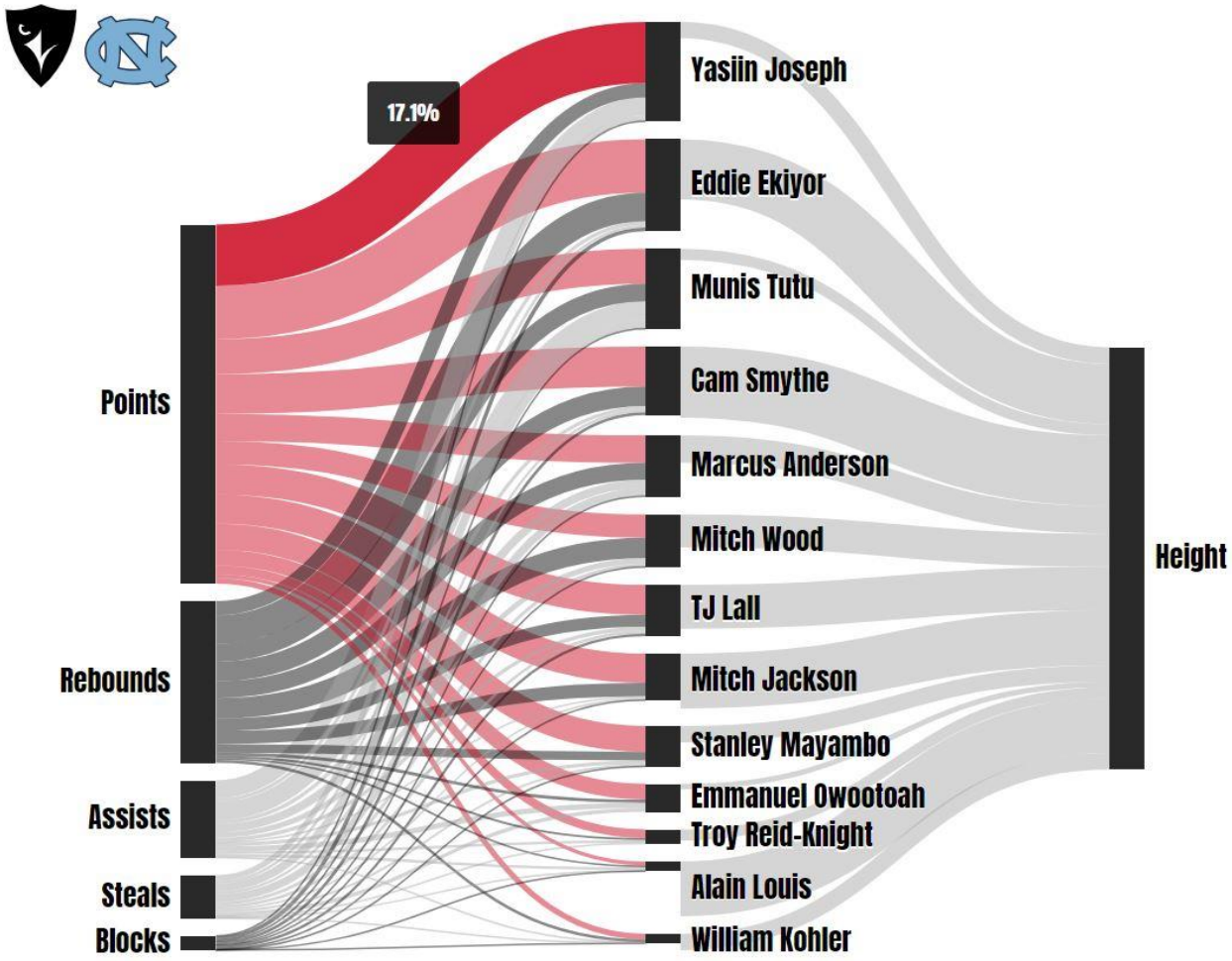
The top ranked universities in the world are visualized through bubbles. The intensity of the colour, as well as size, indicate higher or lower rankings.

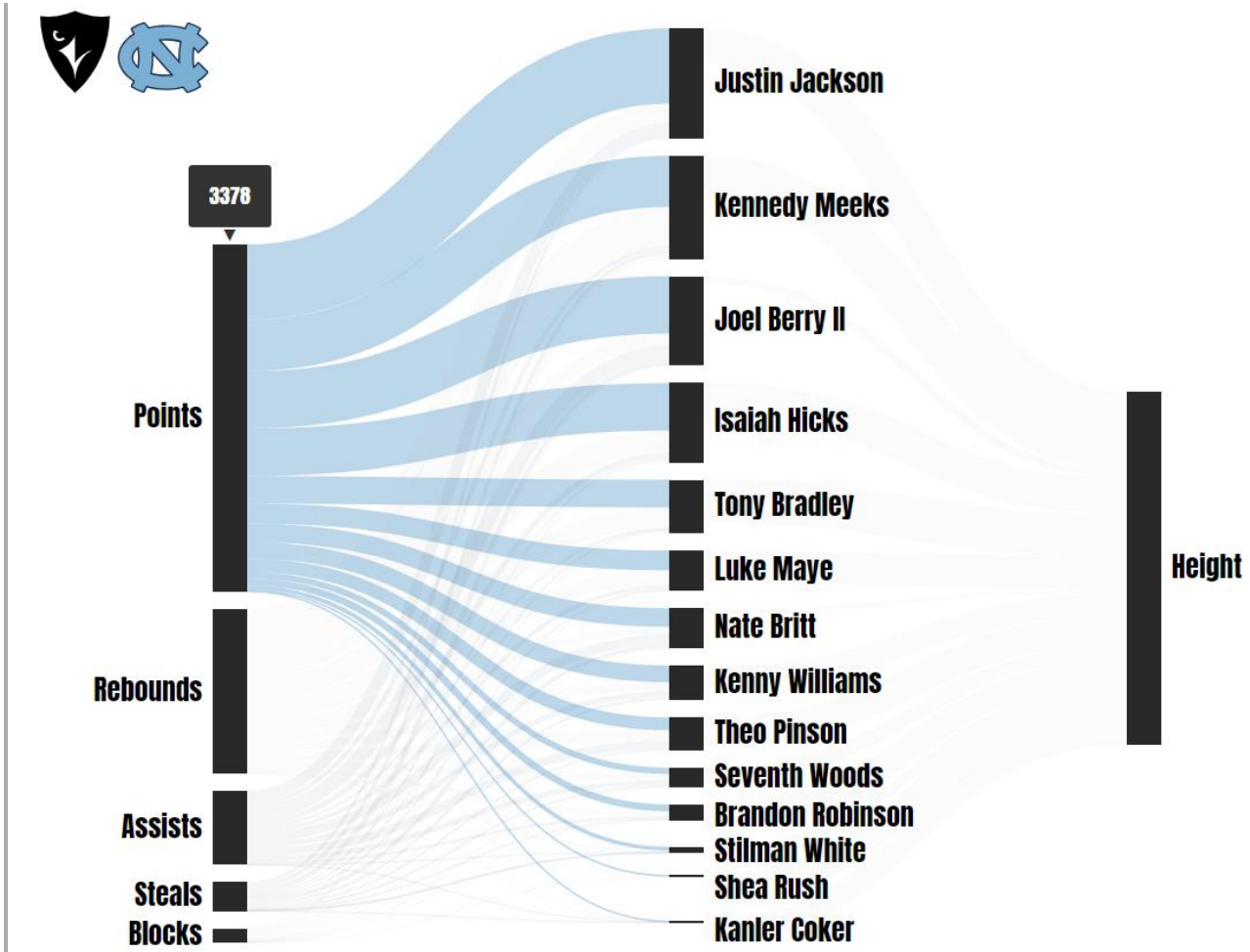
Data Visualization: Carleton vs UNC Basketball

2018

JavaScript, HTML

This visualizes the roster of a basketball team and each player's con-tribution to important statistics over the course of a season. It contrasts this with the height of each player.

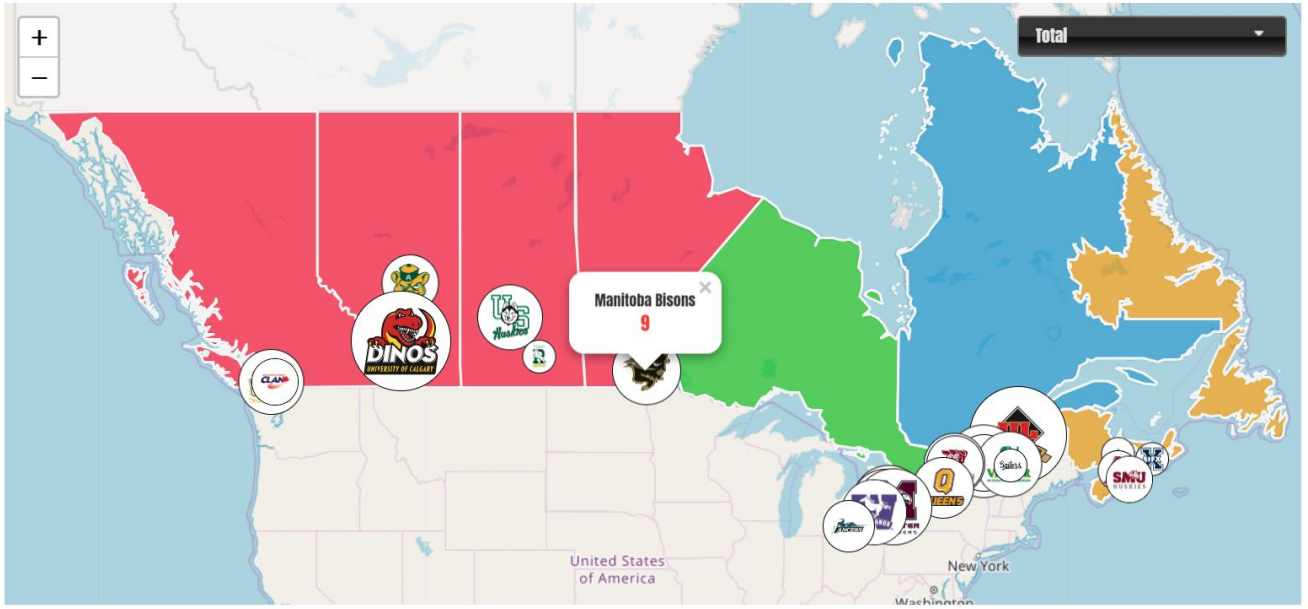



3378
Points
Rebounds
Assists
Steals
Blocks
Justin Jackson
Kennedy Meeks
Joel Berry II
Isaiah Hicks
Tony Bradley
Luke Maye
Nate Britt
Kenny Williams
Theo Pinson
Seventh Woods
Brandon Robinson
Stilman White
Shea Rush
Kanler Coker
Height

Data Visualization: Canadian University Alumni in the CFL

2018
JavaScript, HTML

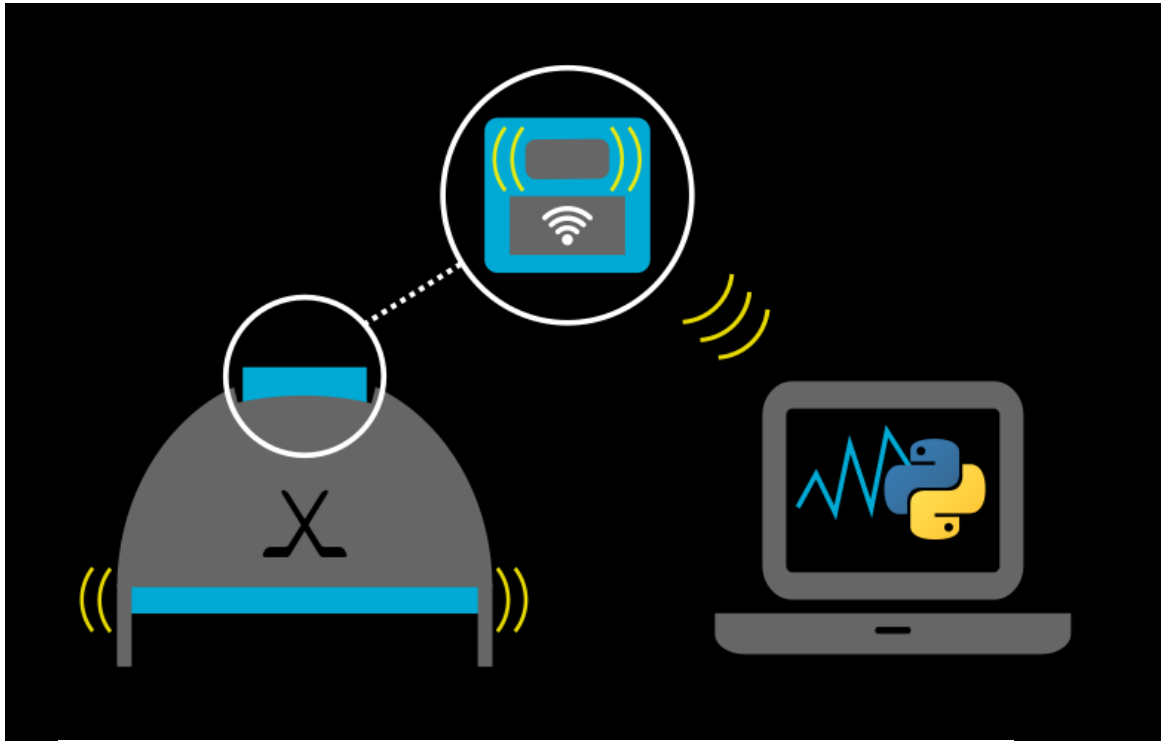
This responsive and interactive map visualizes the number of alumni from Canadian universities that are on CFL rosters. It breaks it down by university and shows the varying amounts by size of their respective circle. The dropdown menu in the top right corner allows for filtering by position.

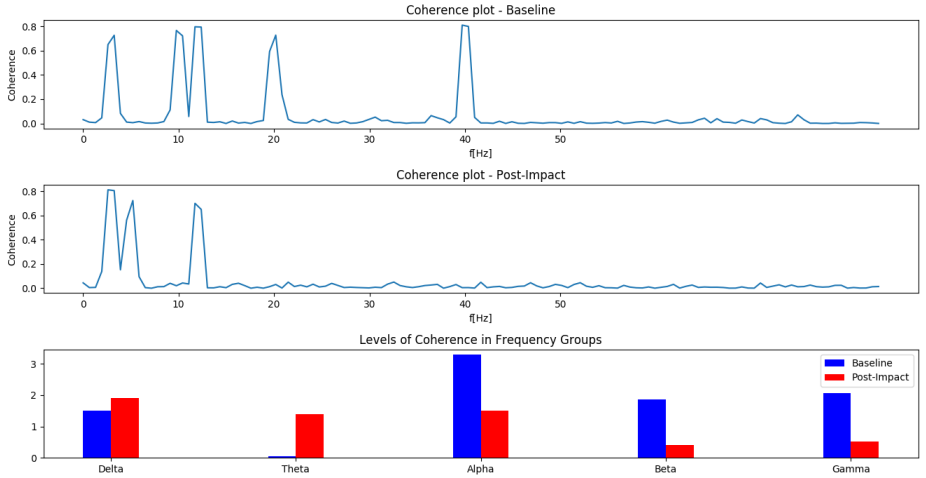


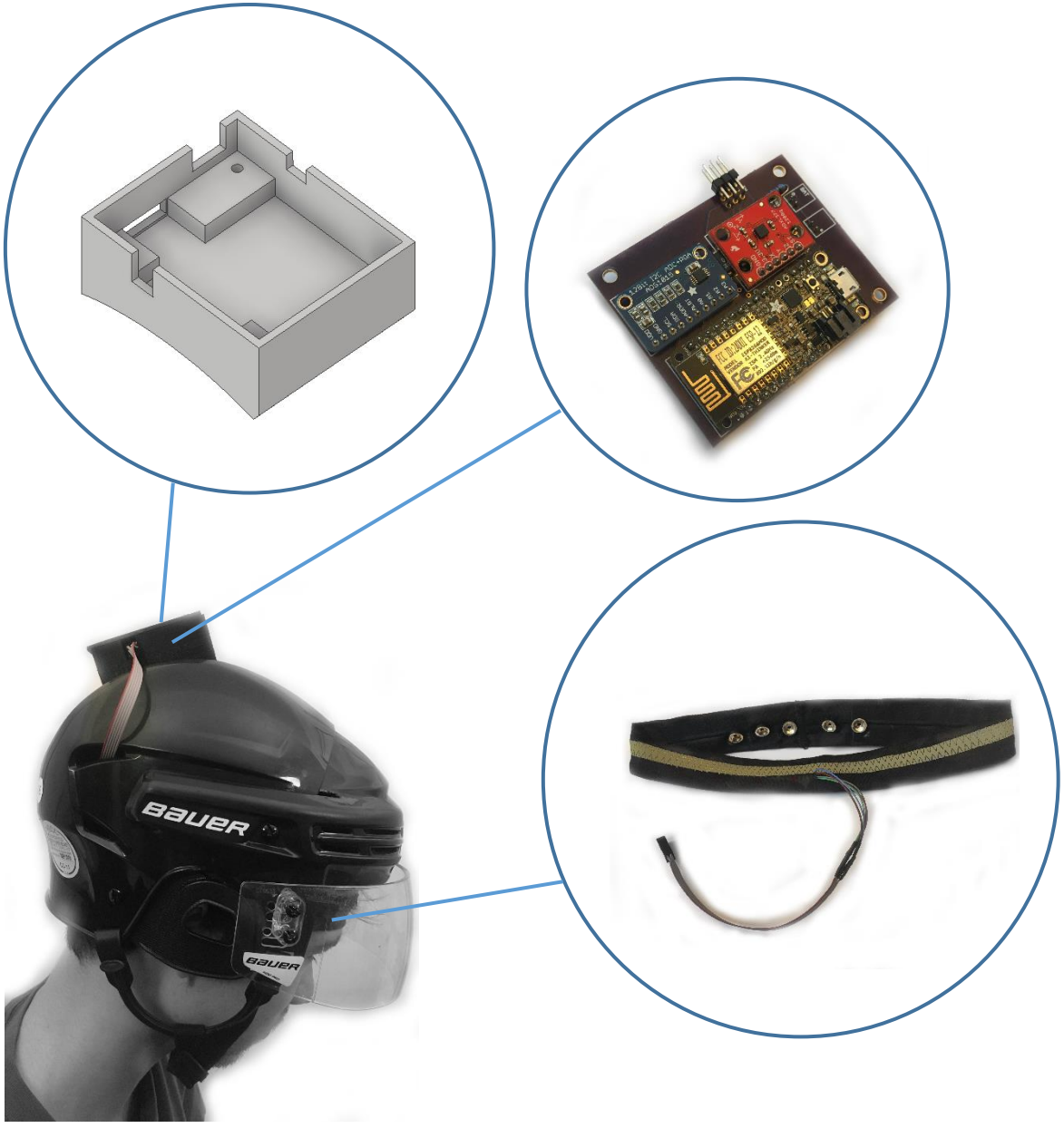
Capstone Project: EEG Head Injury Tool (eHIT)

2016-2017
Python, Arduino, 3D CAD, Inkscape

The eHIT is a device that is designed for use with a hockey helmet. It uses an EEG to record brain activity before and after an impact and then compare it using coherence algorithms. The impact is detected using an accelerometer and the data is sent to a computer using WiFi. The data is visualized in a Python GUI. I used Inventor to CAD custom casing that was then 3D printed to house the microcontroller.



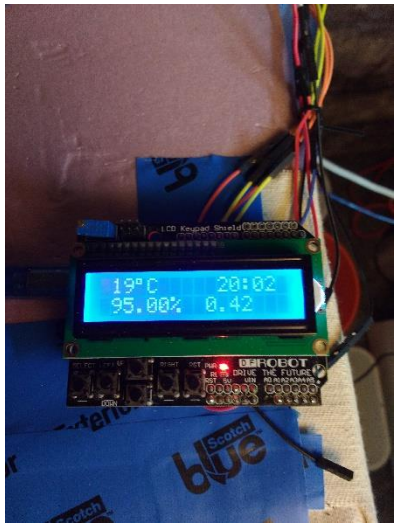


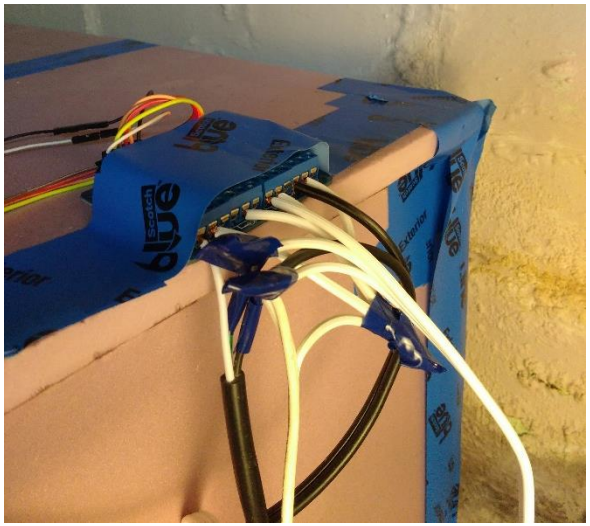

BAUER
BAUER

Automated Garden

2017
Arduino, Construction

The goal of this project is to automate a garden system. The HMI is housed inside an insulated wooden frame. It is controlled through input to an LCD shield attached to an Arduino board. The number of hours of light, the temperature, and amount of time to run a water pump, are all controlled through this interface via a relay. The LCD display shows temperature, time, humidity and percentage of the time the heater runs.





Volleyball Club Logo

2017
Inkscape

This logo was designed as branding for a volleyball club.