Luke Erling Fredrickson

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EDUCATION

University of Vermont // *Burlington, VT* *Degree Expected May 2022*

- Bachelor of Science, Computer Science // Statistics Minor // Dean's List: all semesters GPA: 3.95

WORK EXPERIENCE

Social Ecological Gaming and Simulation (SEGS) Lab, University of Vermont // *Burlington, VT*

Undergraduate Research Assistant *June 2020 — Present*

- Created an experimental game in Unity to study human risk-taking behavior in the context of COVID-19. Programmed game scripts in C#. Created pixel art assets and animations from scratch using Aseprite.
- Programmed a custom survey tool for Unity in C# that builds from JSON data extracted from Google Forms.

Packetized Energy // *Burlington, VT*

Software Developer Intern *Sep 2020 — Dec 2020*

- Contributed production front-end and back-end code to a single-page React application.
- Integrated back-end AWS data into front-end React components using Redux, AWS Lambda, and Serverless.
- Utilized Jest to write unit tests and integration tests for production code.

Department of Computer Science, University of Vermont // *Burlington, VT*

Teaching Assistant, Data Structures and Algorithms *Jan 2020 — May 2020*

- Assisted students with conceptual material and C++ programming for CS124: Data Structures and Algorithms.

PROJECTS

Personal Website // lukefredrickson.me

UVM Bikes! Website // uvmbikes.com

- A static website for the UVM student bicycle co-op, built with React, Gatsby, and headless WordPress.
- UI Designed in Figma and implemented with Tailwind CSS.

UVM Cycling Team Website // uvmcycling.com

- A static website for the UVM Cycling Team, built with React and Gatsby, and styled with vanilla CSS.

Raspberry Pi Spotify LED Visualizer // github.com/lukefredrickson/spotify-led-visualizer

- A web app which harnesses Spotify API data to visualize music on an LED strip via a Raspberry Pi server host.
- Utilizes Node.js, Express, and Socket.io to manage user authentication, data flow, and API queries.

Metapopulation Dynamics Simulation // github.com/lukefredrickson/metapopulation-dynamics

- Graphical simulation of population migration between discrete cells in an enclosed ecosystem over time.

TECHNICAL SKILLS

Languages: JavaScript, Python, HTML & CSS, C#, C++, C, R, Java

Libraries & Frameworks: React, Redux, GraphQL, Gatsby, Tailwind CSS, Jest, Serverless

LEADERSHIP & COMMUNITY INVOLVEMENT

UVM Bikes! (Student Bicycle Co-op) // *University of Vermont*

President *May 2020 — Present*

- Oversee club operations, communications, marketing, and execution of long-term club goals.
- Manage a team of over 20 student volunteers and a leadership team of 5 club officers.
- Volunteer several hours a week fixing bicycles for UVM students and faculty.

Treasurer *May 2019 — May 2020*

- Created and managed the club budget and inventory. Coordinated purchases with local vendors.