

Elliott Rodden

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Education

The University of North Carolina at Chapel Hill

Expected Graduation May 2023

Computer Science and Statistics and Analytics Double Major, Bachelor of Science

- **GPA: 3.63**
- Foundations of Programming, Data Structures, Computer Organization, Models of Computer Language, System Programming Fundamentals, Web Programming, Algorithms, Programming Language Concepts, Introduction to Security
- Discrete Mathematics, Calculus I-III, Linear Algebra, Methods of Data Analysis, Probability for Data Science, Sports Analytics

Technical Skills

- Languages: Python, Java, JavaScript, C, HTML/CSS, TypeScript, R, Assembly Language (MIPS)
- Technologies: Git, HTTP, React, Express, Node.js, MongoDB, Next.js, jQuery, SQL, Microsoft Excel, Google Maps API, JSON Web Tokens, Matplotlib, Scalable Vector Graphics, NextAuth

Projects

Cards with Friends

2021

- Developed a full-stack website using **Next.js** with authentication through **NextAuth** to host free online card games between multiple people simultaneously.
- Created an email service to verify user accounts and reset passwords.
- Implemented a dynamic single page website using Next.js and **React** which uses server-side rendering for search engine optimization.
- Created interactive user interface from scratch using **HTML/CSS** and **JavaScript** as well as custom **Scalable Vector Graphics**.

Mandelbrot Set Visualizer

2021

- Worked with **JavaScript Canvas** and **React** to create an interactive 2D visualization of both the Mandelbrot and Julia sets.
- Implemented an algorithm to create HSV colors and then transform them into RGB colors to display details within the images.
- Used multi-threading with **JavaScript Workers** to allow user to selected thread count to speed up calculations of complex algebra.

Spotifootube

2020-2021

- Developed a full-stack website to allow users to play music and create custom playlists using the **Spotify API** and **YouTube Player API**.
- Utilized **MongoDB** to design a scalable and easy to maintain document-based database which allowed users to create multiple playlists and add songs to each of those playlists individually.
- Implemented a custom **HTTP** based **RESTful API** for finding songs and obtaining their data through the **Spotify API** and then playing them.

Plain Text File Sorter

2020

- Developed a command line **C** program which take any **ASCII** text and sort it line by line while dynamically allocating memory with an efficient and novel heuristic.
- The algorithm developed made the program in the top 10% of the class for both time and space complexity.

Stock Market Visualizer

2019-2020

- Developed full-stack website in **Python** using **Flask** which used a **MySQL** database to store user and stock market data which could be updated both automatically and at user request.
- Used both **Matplotlib** and **Yahoo Finance API** to gather stock data and graph market trends over any time frame.

Professional Experience

Tutor at Mathnasium

2018-2019

- Served as a tutor for subjects from elementary mathematics to calculus for students aged 8-18.