GitHub
Personal Website

IAIN TIERNEY

(914) 374-8439
TierneyIainF@gmail.com

EDUCATION

Buffalo, NY **University at Buffalo** **Aug 2018 – May 2022**

- **Major:** Computer Science, B.S. **| GPA:** 3.8/4.0 **| Honors:** Dean's List
- **Relevant Coursework:** Software Engineering, Algorithms and Complexity, Data Structures, Discrete Structures, Systems Programming (Distributed Systems), Computer Organization, Object Oriented Programming (OOP)

EXPERIENCE

Software Engineer Intern **NASA Jet Propulsion Laboratory** **June 2021 – Aug 2021**

- Led the development of a new Full-Stack Angular application for data analysis of an autonomous spacecraft
- Developed a RESTful API with Flask and a database schema for SQLite to store millions of time series data points
- Established a remote testing and development environment in AWS and Amazon EC2 using Docker and bash scripts
- Reduced the time to interpret mission data by approximately 50% by creating an improved GUI for downlinked data
- Implementing UI designer's mockups of new interfaces to visualize various data points of a spacecraft during flight

Software Developer, Research **University at Buffalo** **Jan 2021 – June 2021**

- Improved simulation data collection by 15 times by implementing parallelization in C++ with Windows executables
- Led a team of researchers to integrate version control (Git) with various simulation models
- Only undergraduate CS student selected to work on this research of capturing space debris in orbit with nets

Teaching Assistant, Intro to CS **University at Buffalo** **Jan 2020 – May 2020**

- Led a group of 15 students through CS fundamentals and algorithm basics with Python projects
- Hosted lab sections and office hours as well as proctored exams for 80 students

Data Coordinator Intern **Town of Somers** **May 2019 – Aug 2019**

- Improved data storage by utilizing a sorting algorithm to query hundreds of users based upon various data points
- Automated user scheduling updates by creating an automated daily email

PROJECTS

View More Projects *(personal website to view more projects and info)*

PicToCartoon: Convert a Picture into a Cartoon Drawing with Artificial Intelligence | View *(please be patient w/ page load)*

- Utilized TensorFlow 2 Neural Networks to create a RESTful API and web app that detects objects, matches an object to a cartoon drawing, and provides an animated cartoon sketch
- Incorporated caching to implement an efficient query system for Google QuickDraw Bin files and limit GET requests
- Developed an algorithm to transform and normalize stroke coordinates to be drawn onto an HTML canvas
- Built With: Python, OpenCV, JavaScript, Flask, TensorFlow 2 Object Detection API, Google QuickDraw API, AJAX, Heroku

Health and Fitness Tracker Dynamic Web App | View *(please be patient w/ page load)*

- Created a RESTful API with persistent data storage and user accounts to keep track of a users' nutrition and health, use a chat app built with a distributed system, calculate various body-health measurements, and more
- Integrated SQLAlchemy and developed a database schema to create an SQLite relational database
- Built With: Python, JavaScript, Flask, Vue, HTML5/CSS3, Heroku, AJAX, SQLite, Git with an Agile (scrum) team

Sorting Visualizer | View

- Implemented multiple sorting algorithms including Quick sort, Bubble sort, Selection sort and Insertion sort
- Engineered an algorithm to control the speed of the visualization using JavaScript Async/Await and Promises
- Built With: JavaScript, jQuery, Bootstrap, HTML5/CSS3

Audio Visualizer | View

- Designed an algorithm with a Fourier transform on SoundCloud audio slices to create a 2D visualizer that manipulates shape radius, depth, and location
- Implemented a URL and keyword search to display relevant results using the SoundCloud RESTful API
- Built With: AJAX, SoundCloud API, Web Audio API, JavaScript, jQuery, Bootstrap, HTML5/CSS3

SKILLS

Proficient: Python, JavaScript, TypeScript, HTML5/CSS3, SQLite, Angular, Flask, Highcharts, Git, Agile(Scrum), Linux
Familiar: Scala, jQuery, Docker, C, C++, MySQL, Vue, Amzon EC2