# Aaron Waller

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**Objective:**
To use my experience with full-stack development, machine learning, artificial intelligence, cybersecurity, Object-Oriented Programming, and algorithms to obtain a position as a full-time software engineer.

## EDUCATION

### UNIVERSITY OF MICHIGAN

**BS in Computer Science**
Ongoing | Ann Arbor, MI
College of Engineering
Cum. GPA: 3.9/4.0
Graduating December 2023

## COURSEWORK

Web Systems, Web Development, Machine Learning, Artificial Intelligence, Cybersecurity, Computer Game Design, Data Structures and Algorithms, Computer Organization, Foundations of Computer Science, Linear Algebra, Multivariable Calculus, Probability, Statistics, Game Theory and Models

## LANGUAGES

Python, C++, Javascript, C#, Java, SQL, HTML, CSS, Bash, C, R

## SKILLS

Full stack, Front end, Back end, Distributed Systems, Cybersecurity, Machine Learning, Unity

## TOOLS & FRAMEWORKS

Visual Studio, VSCode, XCode, Github, Bitbucket, Microsoft SQL Server Management Studio, Unity, Linux Bash Terminal, React, Flask, Ghidra, PyTorch, Docker, Hadoop, AWS, Jira

## AWARDS

**University of Michigan James B. Angell Scholar**
Received for achieving all "A"s for two or more consecutive terms.
**University of Michigan William J. Branstrom Freshman Prize**
Ranked top 5% in the College of Engineering.
**Dean's List**
F20, W21, F21, W22, F22, W23
**University Honors**
F20, W21, W22, F22, W23

## EXPERIENCE

### BNY MELLON SOFTWARE ENGINEER INTERN

Pittsburgh | June 2023 - August 2023

- Tools used: Microsoft SQL Server Management Studio, LexisNexis Bridger Insight XG4 and XG5, Splunk.
- As a member of an Agile development team, created design documents for data migration of a vendor application utilizing a new MSSQL database schema.
- Converted and tested 50+ stored procedures for the new database schema.
- Worked in compliance engineering to provide risk assessment on current and potential future customers. Utilized LexisNexis Bridger Insight to determine if an individual or business is sanctioned, politically exposed, or low risk.

### UKG SOFTWARE ENGINEER INTERN

Remote | May 2022 - August 2022

- Tools used: Visual Studio, Github/Bitbucket, Microsoft SQL Server Management Studio, and Postman API.
- As a member of an Agile development team, enhanced CanadaTax, a web app used by UKG employees to assist customers with their Canadian taxes. Focused on features that help account managers keep track of pending collections from customers.
- Implemented a back-end to pull data from multiple tables, and added an additional column to store employee notes related to each collection (SQL and C#). Added front-end features to sort alphabetically or by earliest date, as well as automatically highlighting past-due dates (Javascript and CSS).
- Implemented a search bar that would allow users to filter results by tax representative (HTML and CSS). Added an autofill feature and utilized local storage to save a user's search (Javascript).
- Created a feature to scan a table to check for manual entries and if found, enable an option to remove them from the database (Javascript).

## PAST PROJECTS

**SEARCH ENGINE** Constructed a fully working search engine for Wikipedia pages using Python. Used a MapReduce model within a simulated version of Hadoop (Madoop) to calculate tf-idf values, which were combined with PageRank scores for each query to produce an effective ordering. Used a back-end server to query tf-idf values and combine them with pagerank scores, and a front-end server to display the GUI and any search results in order.

**IMAGE PROCESSING WITH NEURAL NETWORKS** Constructed a Convolutional Neural Network (CNN) and a Deep Neural Network (DNN) to identify dog breeds from images. Used supervised learning to train the networks and the PyTorch library to construct the models.

**PREDICTING REDDIT POST EMOTIONS WITH SVMS** Constructed various support vector machines to classify the sentiment of a Reddit post. Used feature extraction techniques to convert posts into supervised learning training data. Used a variety of performance measures to test different hyperparameters, kernels, and penalties. Used one-vs-all methodology to construct a multi-class classifier.