

Harrison Hutton

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EDUCATION

UNIVERSITY AT BUFFALO

BS/MS IN COMPUTER SCIENCE
AND ENGINEERING

BS IN APPLIED MATHEMATICS

MINOR IN PHYSICS AND
PSYCHOLOGY

Expected May 2024 | Buffalo, NY

Cum. GPA: 3.84

Deans List for 6 semesters

COURSEWORK

UNDERGRADUATE

Computer Science

Algorithms and Complexity

Computer Architecture

Data Structures

Programming Languages

Quantum Algorithms

Software Engineering

Systems Programming

Mathematics

Abstract Algebra

Advanced Calculus

Discrete Math

Game Theory

Linear Algebra

Ordinary Differential Equations

Partial Differential Equations

Real Analysis

GRADUATE

Computer Science and
Engineering

Distributed Systems

SKILLS

Programming Languages

Python • C • Angular/Typescript

Go • OCaml

Markup Languages

HTML • CSS • LaTeX

Software

Git • Github • GitLab • Zenhub

Firebase • JetBrains IDEs • VS Code

Jupyter Notebook • XCode • Terminal

PROJECTS

GOMAD ADMIN MANAGEMENT SYSTEM (PRIVATE REPO)

January 2022 - Present | Buffalo, NY

- Designed a **SaaS** web app for my high school's music and drama booster board.
- Utilized **Angular** and **Firebase's Firestore Database** to create a real-time, vendor-management service that automates tedious work such as sending emails and updating vendor balances.

MESSAGE SERVICE AND FAILURE DETECTOR (PRIVATE REPO)

February 2022 | Buffalo, NY

- Architected a distributed message service in **Go** using concurrent goroutines.
- Applied message-passing techniques to build a heartbeat failure detector that sends and receives serialized Google protobuf [📄](#) messages.

FUNCTIONAL LANGUAGE INTERPRETER (PRIVATE REPO)

February 2022 - May 2022 | Buffalo, NY

- Designed an interpreter in **OCaml** by leveraging pattern matching and mutually recursive definitions of types and functions.
- Implemented support for first-class and recursive functions as well as in/out parameters.

MINOR PROPHETS | DEVELOPER

September 2021 - December 2021 | Buffalo, NY

- Developed, in an **Agile** environment, a fast-paced, multiplayer, music-trivia game for my **Software Engineering** course.
- Prioritized professional organization by writing **user stories** on **Zenhub**
- Integrated the **Spotify API** via the **Spotipy** Python library to randomly generate trivia questions based on current, popular music.
- Engineered the question timer **React** component to handle automatic redirection.

"RISK" DICE ROLL CHANCES

July 2021 | Franklin, NC

- Utilized **combinatorics** to algorithmically compute the chances of winning a dice roll in Risk, via **Monte Carlo** methods.
- Produced visual results by programming a solution in Python and then interpreting **JSON** data in Excel.

EXPERIENCE

UNIVERSITY AT BUFFALO | SENIOR TEACHING ASSISTANT

September 2020 - Present | Buffalo, NY

- Supervised and motivated groups of 20 computer science students through weekly lab activities (**250+ students total**).
- Communicated key algorithms and complexity analysis ideas to classes of 25 students through the teaching of weekly recitations (**150+ students total**).

M&T TECH (FORTUNE 500 BANK) | TECH INTERN

June 2022 - August 2022 | Buffalo, NY

- Developed and stylized a front-end document search platform using **Angular** and **Bootstrap** for internal banking services.
- Saved M&T \$4 million per year going forward by producing a central user interface where employees can probe every internal document repository.