# Zachary Dawson

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https://zachwdawson.github.io

## Education

**Northeastern University Honors Program,** Boston MA September 2017 - May 2021
**Khoury College of Computer Sciences**
*Bachelor of Science in Computer Science, Minor in Mathematics, magna cum laude*

**GPA:** 3.7/4.0
**Relevant Coursework:** Artificial Intelligence, Machine Learning and Data Mining, Software Development, Networks & Distributed Systems, Algorithms & Data, Computer Systems, Object Oriented Design, Linear Algebra, Statistics and Stochastic Processes
**Activities:** Club Spikeball, Intramural Soccer

## Technical Knowledge

**Languages:** Proficient*:* Python, Java, SQL, Bash; Familiar: Scala, Perl, Groovy
**Frameworks/ Technologies:** Slurm Workload Manager, GNU parallel, Ruffus, RESTful APIs, Spring Boot, Apache Tomcat, Jenkins, Git, JOOQ, Docker, pandas, NumPy, scikit-learn, Matplotlib, Jupyter Notebook
**Databases:** MySQL, MongoDB, FileMaker
**Monitoring:** New Relic, Vivid Cortex, Rapid7
**Cloud:** AWS
**Testing:** Gatling, Spock, Mockito

## Experience

**MIT BioMicro Center** Cambridge, MA January 2020 – June 2020
*Bioinformatics Co-op*

- Ensured timely data delivery and analysis of new NovaSeq sequencing data, averaging 2-4 terabytes a week.
- Migrated legacy FASTQ generation and format to industry standard, decreasing FASTQ generation time for NextSeq and NovaSeq flow cells by over 50%.
- Implemented Novaseq and 10X Cellranger pipelines into existing Illumina pipeline, saving biologists days of running and monitoring scripts.
- Maintained and improved web application for sample intake, automating tedious database entry for each new project.

**Skillz Inc.** San Francisco, CA January 2019 – June 2019
*Server Co-op: Scale/SRE Team*

- Led planning and implementation of new internal load testing infrastructure, enabling up to ten times standard production load in staging.
- Deprecated all MongoDB instances and migrated data to MySQL.
- Created weekly company-wide presentations on system health and performance.

## Projects

**ZBot**

- Built end to end pipeline for training, testing, and evaluating heads-up limit hold'em agent.
- Using hand histories of successful players, trained supervised machine learning models to predict player actions and hand ranks.
- Integrated opponent models into Monte Carlo Tree Search to achieve an average of 0.1 big blind profit per decision against rules-based agent.

## Interests

Skiing/Snowboarding, golf, reading