

# Nathan Rizik

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## EDUCATION

### Michigan State University

B.S. Computer Science

Dean's List 2015-2019

SpartaHack 2018 & 2019 Hackathon Winner

GPA 3.8

Dec 2019

- **Relevant Coursework:** Computer Organization and Architecture, Operating Systems, Algorithms and Data Structures, Computer Networks, Algorithm Engineering, Machine Learning, Database Management Systems, Computer Graphics, Advanced Topics in C++

### Hong Kong University of Science and Technology

Exchange Student Program

Clear Water Bay, HK

Jan 2018 – Jun 2018

## EXPERIENCE

### Microsoft – Power BI

Software Engineer – Backend in Paginated Reports, a premium offering of the Power BI suite

Redmond, WA

Feb 2020 – present

- One of the primary developers in Premium Per User feature, allowing single users, in addition to enterprises, a premium license through efficient scaling in containers.
- Contributed to recreation of the async export API, allowing the download of reports through REST, and patched existing security flaw in the service.
- Assisted team by interviewing candidates, mentoring new team members, contributing in code and design reviews, and developing debugging tools to speed up development of the product.

### Michigan State University

Research Assistant – Evolutionary Computation

- Created genetic algorithms to model and observe transitions and patterns in evolution.
- Represented signaling between organisms within an environment based on different tag-matching metrics and selection schemes.

### United Airlines

Contract Software Engineer - Capstone

- Created United Airline's current website and iOS app for their training and scheduling system used by over 10,000 aircraft technicians, schedulers, and instructors.
- Implemented scheduling, class enrollment, attendance, employee time and calendar tracking.
- Optimized scheduling process by designing algorithm to automatically schedule classes based on room size requirement, instructor travel time, and required resources for a class.

East Lansing, MI

May 2019 – Dec 2019

### Michigan State University

Teaching Assistant – Algorithms and Data Structures

- Created challenging projects for class of 80 third-year students that tested them on implementing the algorithms and data structures they had learned.
- Held popularly attended office hours and consulted with students on their coding projects.

East Lansing, MI

Aug 2018 – May 2019

## PROJECTS

### ChiPy8 – Python CHIP-8 Emulator

Oct. 2020

- Emulated a CHIP-8's hardware including memory, CPU, display and registers to allow the playback of software meant for CHIP-8 in Python.
- Recreated and mapped all 34 CPU instructions from the original hardware.
- Created a debugger within the emulator to control execution and view the current state of the emulator.

### Flappy Darwin – Evolving Flappy Bird through Natural Selection

Dec. 2019

- Used evolutionary computation to evolve a perfect program in the game, *Flappy Bird*.
- Created an assembly-like interpreted language to represent and test each bird in the population.
- Evolved the best program through lexicase selection and different mutations.

### IQueue - Collaborative Playlist through Song Voting (*SpartaHack 2019 Hackathon First Place*)

Jan. 2019

- Created an IOS app that connects to a host's Spotify playlist and allows anyone with the app to vote on the next song to be played.
- Developed Python script that used Spotify API hosted by Google Cloud and IOS App that communicated to Firebase for retrieval of data and voting.

## SKILLS & INTERESTS

- **Skills:** C++, Python, C#, Assembly, Swift, SQL, Git, Linux, OpenGL, Qt, Emulation, Distributed Systems
- **Interests:** Tutoring, Fitness, Nutrition, Biking, Graphics, Automation, Art, Bouldering, Emulation