# Eric Hao

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## EDUCATION

**Northwestern University**, Evanston, IL — Sept 2014 – June 2018
McCormick School of Engineering and Applied Science
B.S., M.S. Computer Science, *Magma Cum Laude*

## SKILLS

**Programming**

| | |
|---|---|
| *Advanced:* | C#, Python, Java, PowerShell, KQL |
| *Proficient:* | C, C++, Lisp, Racket, Rust, Scala, JavaScript, TypeScript, HTML, CSS, MATLAB, SQL, Bash |
| *Novice:* | Ruby, Go, Haskell, PHP, CoffeeScript |
| **Tools:** | Git/GitHub, .NET, Azure DevOps, Kusto, Kafka, Linux, macOS, Windows, Unity, React |

## EXPERIENCE

**Microsoft**, Redmond, WA — Sept 2018 – Present
*Software Engineer, Software Engineer II*

- Design, build, and deploy core Azure infrastructure services that make millions of VM placement decisions per day
- Reduce concurrent collisions and retries by over 50% in busy regions by executing a now patent-pending strategy
- Drive scale by improving monitoring, delivering performance improvements, and analyzing terabytes of data
- Coordinate across teams to organize and create a workflow enabling dedicated and reserved capacity
- Contribute to several large (well over 50 GB) repositories using .NET, C#, PowerShell, Git, and Azure DevOps
- Answer, investigate, mitigate, and resolve urgent customer-impacting incidents as part of an all hours on-call rotation

**Center for Connected Learning and Computer-Based Modeling (CCL)**, Evanston, IL — Jan 2017 – June 2018
*Software Developer*

- Contributed bug fixes and performance improvements to NetLogo, an open-source multi-agent modeling application, using Java, Scala, IntelliJ, sbt, CoffeeScript, Git, JMH, and AWS EC2
- Reduced performance times by up to 60% for selecting agents within a radius by researching, implementing, testing, benchmarking, and releasing an improved algorithm
- Completed a final research project that experimented with incorporating laziness into NetLogo's agent sets

## PERSONAL PROJECTS

**Songs** — July 2020 – Present
*Church Life Apps*

- Deliver a user-friendly online alternative to hard copy hymnals for over a hundred users across the country
- Plan, design, develop, test, host, and monitor an online hymns songbook built on TypeScript and React
- Collaborate and discuss important features with users and volunteer contributors

**VeggieButt** — Jan 2018 – May 2018
*Design Competition – Northwestern University*

- Received 1st place by scoring more points than each opponent in an autonomous robotics competition
- Devised, programmed, and tested a block-gathering strategy using Arduino, ultrasonic sensors, color sensors, servo motors, and custom laser-cut or 3D-printed parts
- Cooperated with 2 other team members to successfully integrate physical parts, electrical components, and code

**Color Improviser** — April 2016
*Music Hack – People's Music School Hackathon*

- Received 1st place and demoed to entire Hackathon
- Developed an interactive educational music web application that uses color to teach users how to play the blues
- Built a working, presentable, and deployable deliverable in 8 hours with HTML, CSS, and JavaScript

## VOLUNTEERING

- **Mentors in Tech (MinT)**, *Mentor* — Nov 2020 – June 2021
- **CodeDay Labs**, *Project Mentor* — June 2020 – Aug 2020