

# Ryan Newkirk

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Email: ryannewkirk2024@u.northwestern.edu

Phone: 773-747-1648

LinkedIn: <https://www.linkedin.com/in/rnewk>

## Education

**Northwestern University**

**McCormick School of Engineering**

**Computer Science Major**

**Data Science & Engineering Minor**

– Undergrad 2020-2024

**Whitney M Young Magnet High**

**School**

– Graduated June 2020

## Notable Coursework

Human Computer Interaction

Data Structures & Algorithms

Computer Systems

Fundamentals of Computer Programming

Multivariable Differential & Integral Calculus

Design Thinking and Communication

Engineering Analysis

Electrical Engineering

Microeconomics & Macroeconomics

## What Excites Me

Coding, Hackathons, Edutainment Video

Production, Badminton, Chess, Piano, Virtual

Reality, Robotics, Smart City

## Skills

Python, C, C++, Java, JavaScript, R, Julia,

Haskell, Racket (DSSL2), HTML/CSS/JS,

Web Scraping, MySQL Workbench, GitHub

Pages, Arduino, Web/Mobile App

Development, Onshape CAD

## Awards

FIRST Robotics

Chicago Regional Championship 4-Time

Winner

2019 World Competition Team

Business Professionals of America 2018-2020

2-Time National Competition Qualifier

**JAVA Programming**

Chicago Citywide Competition, 1<sup>st</sup> Place

State Competition, 3<sup>rd</sup> Place

**Computer Programming Concepts**

State Competition Winner

2018 Congress of Future Science and

Technology Leaders Award of Excellence

2019 American Invitational Mathematics

Examination (AIME 12) Qualifier

## Work Experience

**Argonne Research Aide-Technical**

Summer 2021-Present

Full Time Internship at Argonne National Laboratory Energy Systems Division.

Independently developed Python scripts and MySQL database to retrieve and store US

power utility companies' real-time customer outage data, representing 70% of US

population. Developed geo-mapping functions, gained experience in data analysis for smart

outage forecasting. These scripts will be used to provide real time electricity outage status

information to researchers and utility companies.

## Extracurriculars & Projects

**Northwestern Formula Racing**

2021

Worked on Telemetry Backend for transferring data from remote vehicle XBee radio to live

database and between a live website with Python.

**Develop + Innovate for Social Change** – Member/Hackathon Participant

2021

Building projects and utilize engineering skills over the course of 10 weeks to make a

positive impact local and worldwide nonprofit organizations.

**Google Kick Start & Code Jam**

2019-Present

Competed in an international programming competition, solving a set of algorithmic

problems in a fixed amount of time. Qualified for Round 1, scored in the top 4% worldwide.

**Northwestern Design Thinking & Communication**

2020-2021

Designed a smart learning device for non-profit org Kids in Danger to facilitate remote

learning for kids during the COVID-19 pandemic. Designed assistive stress sensors and

display to measure dynamic weight for rehab of partial weight-bearing status patients and

clinicians at Shirley Ryan AbilityLab/Amita Health.

**Bridge-It-Back Design-a-thon**

April 2021

Designed a branched dry well water drainage system to prevent flooding at James Park for

the Evanston Ecology Center.

**Chi Hack Night**

2018-Present

Attend weekly meetups to discuss civic issues and analyze city data. Co-developed the

Chicago 311 Virtual Assistant and worked on the “Books to Women in Prison” project.

**Google Computer Science Summer Institute**

2020

Learned how to build web applications using the p5 Library, APIs, Node.js, and ExpressJS.

**Whitney Young Mobile App Inventor Club**

2017-2020

President and Founder of this club. Organized weekly meets, led design of mobile apps.

Created a website to host information for 150 school clubs.

**FIRST Robotics – FIRST Tech Challenge**

2017-2020

Programmed robots using Android Studio. Applied mechanical engineering, electrical

engineering, and circuitry skills to build robots that compete in performing tasks.

**Business Professionals of America**

2018-2020

Building information technology skills and applying Java knowledge to business related

problems. Represented Illinois at the 2019 National Leadership Conference in the JAVA

Programming competition, and NLC qualifier in Computer Programming Concepts in 2020.

**Michigan Institute for Data Science Summer Camp**

2019

Exploring Data Science through Nature, Art, Athletics, and Autonomous Vehicles. Learned

to teach computers how to distinguish data sets using JuliaBox, and Jupyter Notebooks.

**Northwestern Center for Talent Development Program: Mechatronics**

2018

Learned electromechanical design and prototyping. Built circuits and robots from scratch,

using low-level electrical components, laser cutting, and 3D printing mechanical parts. Built

an autonomous vehicle.