Ryan Newkirk

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Education

Northwestern University
McCormick School of Engineering
Computer Science
– 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, Museums, 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, Data Science, 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, 1st Place
State Competition, 3rd 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. Wrote geo-mapping functions, gained experience in data analysis for smart outage forecasting.

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, DynamoDB, AWS, REST API.

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: a smart shopping cart. Wrote code to read the sensors and control the actuators.

Congress of Future Science and Technology Leaders 2018
Represented Illinois as a delegate at the 2018 Congress of Future Science and Technology conference.