Ryan Newkirk

March 2021

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Education

Northwestern University
McCormick School of Engineering
– Undergrad 2020-2024
Whitney M Young Magnet High School
– Graduated June 2020

Notable Coursework

CS214-0 Data Structures & Algorithms
CS211-0 Fundamentals of Computer Programming II
GEN_ENG205-2 Engineering Analysis II
MATH228 Multivar. Diff & Integral Calculus
DTC1 Design Thinking and Communication
AP Computer Science
AP English Lang & Comp
AP Physics 1,2,C
AP Microeconomics & Macroeconomics

What Excites Me

Coding, Hackathons, Google Foobar, Edutainment Video Production, Badminton, Chess, Piano, Virtual Reality, Robotics, Museums, Smart City

Skills

C, C++, Java, JavaScript, Python, R, Julia, Haskell, Racket (DSSL2), GitHub Pages, Arduino, Web/Mobile App Development, Data Science, Onshape CAD

Awards

2016 Broadcom National Science Competition Broadcom MASTERS Nominee

Chicago's Youth Math Symposium QED 2015, 2016 Highly Distinguished Mathematics Research Award

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

FIRST Robotics
Chicago Regional Championship 4-Time Winner
2019 World Competition Team

2019 American Invitational Mathematics Examination (AIME 12) Qualifier

Activities & Experience

Google Kick Start & Code Jam   2019-2021
Reached Round 1 A-C in Code Jam 2020, best placement 1556th Place
Participated in 6 rounds of Kick Start, best placement 1205th Place

Northwestern Design Thinking & Communication   Fall 2020, Spring 2021
Designed a device for non-profit organization Kids in Danger to enhance a child's tablet and facilitate remote learning.

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   Summer 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 and taught students how to create apps and build computational thinking skills.

FIRST Robotics   2014-2020
FIRST Lego League "Seismic Squad" and "Lego Fire" 2014-2015
FIRST Tech Challenge "Robophins" 2017-2020
Programmed robots using Android Studio, acquired skills in mechanical engineering, electrical engineering, and circuitry. Wrote and maintained an Engineering Notebook. Participated in team fundraising activities.

Whitney Young Math Team   2016-2020
Studied advanced mathematics concepts and competed in many contests.
2019 AIME (AMC 12) Qualifier. 1st-3rd place top team in math leagues at the city and state level; City of Chicago Math League, North Suburban Mathematics League of Illinois, Illinois Council of Teachers of Mathematics, etc. Created math videos, 4-time CCML video contest winner and overall 1st place in the CCML 2019 video contest.

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.

National Honor Society / National Junior Honor Society   2016-2020
Took on service roles to support the WY school and community. Volunteered in several Chicago Marathons, the Great Chicago Food Depository, school/community events.

Michigan Institute for Data Science Summer Camp   Summer 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.

UIUC Worldwide Youth in Science and Engineering Program   July 2019
Utilized CAD, Arduino programming, and prototyping skills to build a Stereolithographic 3D Printer, and explored other Mechanics concepts through hands-on, minds-on activities.

UChicago Young Scholars Program   Summer 2015, 2016, 2018
Attended University of Chicago Math Department summer program for three years, studying Number Theory and Geometry. Worked with YSP co-director and professors to design the 2018 Summer Camp T-Shirt.

Northwestern Center for Talent Development Program: Mechatronics   Aug 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   Summer 2018
Represented Illinois as a delegate at the 2018 Congress of Future Science and Technology conference.

UIUC ILLINI Summer Academies: ECE   Summer 2018
Explored Electrical and Computer Engineering through hands-on, minds-on activities.

Fenghua Academy Youth Leadership Program   Summer 2017
As a foreign student teacher, I planned classes and organized cultural exchange activities for a class of 35 students at the San Yuan Foreign Language School.