

Lincoln M. Roth

Experienced Mechanical Engineering student looking for Summer 2020 internships in mechatronics and robotics

EXPERIENCE

Rutgers WINLAB, New Brunswick — *Engineering Intern*

2019: Built a vehicle control model for a **small-scale autonomous vehicle testbed**. Used computer vision to localize all vehicles in the intersection to control them precisely based on commands through a pub-sub messaging system. Built queuing system to ensure cars will always be available for use at any introduction points.

2018: Performed **small-scale autonomous traffic research**, working on building **inverse-kinematic models** for the cars, and building the server backend encompassing all aspects of the project.

2017: Developed smart bike technologies to make cycling safer, easier, and smarter. I designed and constructed the **automated self-locking mechanism**, all lighting on the car (turn signals and headlights), and connected all the hardware to an app with BLE.

Rutger Solar Racing, New Brunswick NJ

July 2019-Present

Worked on the Rutgers Solar Race Car and worked on all aspects of the project. I designed the wheel hubs, aided with construction of the batteries and battery box, and worked on other electronics testing.

hackPHS, Princeton NJ — Executive Director/Founder

2017-2018

Organized and founded hackPHS, **hackPHS.tech**, a **24 hour high school hackathon**, one of the **largest high school hackathons in the US**. I raised **over \$15k**, planned the entire event, and marketed the event. Compared to hackPHS 2017, hackPHS 2018 had **4x** the hackers, **5x** the budget, and was **twice** as long.

Princeton High School Computer and Robotics Club — President

Princeton High School Science Olympiad — Engineering Captain

EDUCATION

Rutgers University, New-Brunswick — *Mechanical Engineering*

B.S. Expected 2023

Member of the **School of Engineering Honors Academy**

Classes - Honors Statics, Honors Multivariable Calculus, Introduction to Computers for Engineers

PROJECTS

CoreXY Fabtotum Large Format 3D Printer

Designed and constructed a **large format 3D Printer** to be able to rapidly produce large parts. **SOLIDWORKS** was used to design the entire machine, and **Finite Element Analysis** was used to optimize all part geometries.

Strobo

Built an iOS app-based stroboscope that used dynamically varied frame rates instead of a flashing light to determine the rate of a rotating object.

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SKILLS

Mechatronics Engineering

CAD/CAE

Software Engineering

Design Software:

SOLIDWORKS

ANSYS

EAGLE

INVENTOR

Software Platforms:

ROS

Python

MATLAB

Java

Swift/iOS

Git/GitHub

AWARDS

hackRPI Best Mobile Hack

Built trailMaps, an iOS app for trail mapping and sharing

PennApps Top 30

Built Strobo, a camera-based stroboscope

hackMHS Best Overall

Built EncryptIMessage

Trinity International Robot

Contest 2017 1st Place High School Individual Olympiad Exam

Trinity International Robot

Contest 2016 1st Place High School Team Olympiad Exam

Other Interests

Chess

Ultimate Frisbee

Combat Robotics

Volunteering

Application Service Project (2016-2019)

Spent a week each summer in Appalachian working on repairing homes.