

**SIMON YOUN**

High School Student | Bergen County Technical High School, Teterboro, NJ

[simonjpyoun@gmail.com](mailto:simonjpyoun@gmail.com)

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**OBJECTIVE**

Very interested in everything engineering, but especially electronics design, chip design, and control systems. In the past, enjoyed designing ASICs, PCBs, robots, and more!!

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**EDUCATION****Bergen County Technical High School**, Teterboro, NJ

High School Diploma, Technical Major: Aerospace | 2022–2026

GPA: 3.886/4 Unweighted

Relevant Coursework: AP Physics C: Mechanics; AP Physics 2; AP Calculus AB & BC; AP Computer Science Principles; AP Human Geography; Applied Aerospace Engineering; Aerospace Engineering Principles; Introduction to Aerospace; Digital Electronics; FPGA and SystemVerilog Development (Taught); 3D Printing and Design (Taught)

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**Columbia Science Honors Program**, New York, NY

Quantum and Classical Computing Devices; Fusion Energy | 2024–2026

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**EXPERIENCE****Research Student**, MIT Beaver Works | 2024

- Learned digital chip design, Verilog, FPGAs, and the Skywater 130nm process.
- Designed a 16-bit CPU and a Keccak f1600 accelerator as a capstone project.

**Scholar**, New Jersey Governor's STEM Scholars | 2024–Present

- Sponsored by the New Jersey Research and Development council to design an autonomous vehicle to deliver emergency supplies in high-density areas.
- Will present the final project in May to New Jersey Government officials.

**Student Team Lead**, NASA TechRise | 2025–Present

- Received a \$1500 grant from NASA to build a high-altitude air balloon experiment.
- Working with NASA and Future Engineer mentors to build the experiment and figure out experimental results.

**Course Facilitator**, Bergen Tech | 2023–2025

- Founded and designed two elective courses on 3D design/3D printing and FPGA design respectively.
- The FPGA course is sponsored by Beaver Works.

**Vice President**, STEM4All Non-Profit | 2024–2025

- Co-founded and manages content for an international non-profit serving hundreds of students.
- Specifically creates course content and helps expand operations to different states.
- Also President of the STEM Club, coaching other kids to win international competitions.

**Intern**, Aviation Hall of Fame New Jersey | 2024–Present

- Created machine learning model based on GloVe to better archive one-of-a-kind historical documents.

**Paid Design Intern**, General Dynamics Electric Boat | Summer 2025 (Upcoming)

- Will help to draft parts on Electric Boat's submarines.
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**SKILLS**

**Hardware and Design:** System Verilog/Verilog, Digital and Analog Circuit Design, FPGA/ASIC Design

**Software and Tools:** Python, Matlab/Simulink, JavaScript, Fusion 360, Micro C++

**EDA:** Multisim/KiCad/EasyEDA, Vivado/Vitis

**General:** Excel, Word, Teamwork, Communication, Leadership

**AWARDS**

**3rd Place**, United States – MIT Engineers Without Borders Science & Engineering Competition (2025)

- Placed 3rd of ~50 national teams in a sustainable engineering challenge.

**Platinum** – CyberPatriots (2024)

- Top-tier finish in the national high-school cybersecurity competition.

**Gold** – Presidential Volunteer Service Award (2023 & 2024)

- Recognized for 250+ volunteer hours each year.

**6th Place** – TEAMs International (2023)

- Ranked 6th worldwide in team-based engineering simulations.

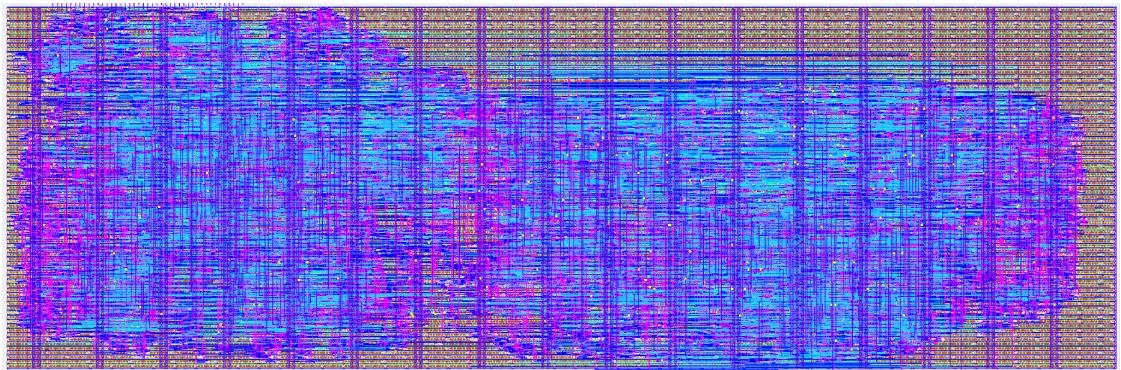
**Top 3** – SeaPerch New Jersey & New York (2024 & 2025)

- Top-three finish in the regional underwater robotics competition

## PROJECTS

### Zoom Zoom CPU and Keccak f1600 Accelerator

- Designed a custom 16-bit CPU using the Skywater 130nm process with a Keccak f1600 accelerator.
- Conducted FPGA verification; awaiting chip fabrication for post-silicon verification.
- Tiny Tapeout Project: [https://tinytapeout.com/runs/tt08/tt\\_um\\_zoom\\_zoom/](https://tinytapeout.com/runs/tt08/tt_um_zoom_zoom/)



### Interactive Pillbox

- Developed an interactive pillbox using an ESP32 and a mobile app to monitor and remind users to take medication.
- Integrated email notifications and logging using the Gmail API.



<https://www.beaver-works-assistive-tech.mit.edu/create-challenge/2024-project-section/2024-project-page-alesci>

### Seaperch ROV

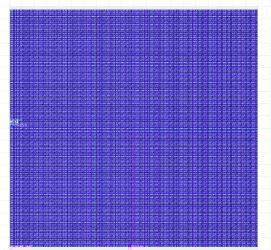
- Designed and created a custom Remotely Operated Underwater Vehicle (ROV) for the Seaperch competition.
- Successfully worked and won 3rd place at regionals for Seaperch.



<https://docs.google.com/document/d/1iBbS7fEoKb5snBDv60IOSr0izzfYEBoJlrD5Jp95B4c/edit?usp=sharing>

### Basic Accelerator for Convolutional Neural Networks

- Designed a basic AI accelerator using parallel systolic matrices and multiple different opcodes for different functions..
- Made the whole project.
- Github: [https://github.com/simonandz/final\\_fpga\\_accelerator](https://github.com/simonandz/final_fpga_accelerator)



### Governor's STEM Scholar Autonomous Medical Delivery Robot

- Developed an autonomous delivery robot that navigates the sidewalk to a certain point using local and global costmaps, sensor fusions, a CNN, and a planner.
- Specifically worked on the control systems to make the robot navigate.

