

HAYDEN HOUSEN

Machine Learning • Computer Vision • Web Development

High school senior with extensive experience in computer science. Possesses impeccable organizational skills and excellent knowledge of programming languages. Has conducted scientific research in the field of machine learning.



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🐙 github.com/HHousen

EXPERIENCE

lecture2notes

Sept 2019 - Present

Will I Have A Snow Day.com

Dec 2019 - Sept 2020

TransformerSum

Mar 2020 - Aug 2020

PicoCTF

Sept 2019 - Jun 2020

Fast.ai

Sept 2018 - Jul 2019

FreeCodeCamp & CTY

Jun 2018 - May 2019

Summarizing Lecture Videos by Classifying Slides and Analyzing Text

Conducted scientific research & created a state-of-the-art system to summarize classroom lectures using machine learning, computer vision, and NLP. Code available at github.com/HHousen.

Predicting Snow Days with Machine Learning

Created an AI-powered automatic snow day predictor website that improves itself overtime using user feedback. Learned about machine learning models and data processing techniques.

Open-Source Neural Summarization Library

Furthered research in neural-network text summarization models, specifically in less researched areas such as long document summarization. 4.45x smaller than state-of-the-art but 94% as accurate. High code quality and thoroughly documented at github.com/HHousen.

Cybersecurity Challenges

Placed 609 out of 15,817 during the competition. Continued to complete all 121 challenges and reach rank 39 out of nearly 100,000 participants. Learned ethical hacking skills including cryptography, forensics, reverse engineering, and binary exploitation.

Deep Learning Fundamentals

Developed an understanding for deep learning concepts by building state-of-the-art models & writing machine learning functions from scratch. Read deep learning books & took online courses at Stanford.

Web Development & Java

Completed about 400 hours of front-end coursework. Built 10 front-end projects. Completed 347 coding challenges. Completed Java courses through Johns Hopkins Center for Talented Youth.



PROJECTS



See machine learning experiments, full-stack websites, and front-end designs at haydenhousen.com

Hayden's self-motivated work ethic led him to take 12 AP classes and every honors class available. He developed his passion for teaching machines to learn as a member of the Science Research program at PHS/UAlbany. By developing and contributing to open source projects, Hayden furthers the state-of-the-art in machine learning research. When he is not programming he enjoys running cross country in the fall and skiing in the winter.

SKILLS



Understands full-stack web development and enjoys creating state-of-the-art machine learning models.

PYTHON	●●●●●●●●●●●●●●
PYTORCH	●●●●●●●●●●○○○○
LINUX	●●●●●●●●●●○○○○
HTML, CSS, JS	●●●●●●●●●●○○○○
GIT	●●●●●●●●●●○○○○
PHOTOSHOP	●●●●●●●●○○○○○○
OPEN SOURCE	●●●●●●●●○○○○○○

EDUCATION



ADVANCED REGENTS DIPLOMA W/HONORS

Sept 2017 - Jun 2021

PAWLING CENTRAL HIGH SCHOOL - GPA: 4.0

Always enrolled in highest level courses. Conducted research into machine learning & computer vision through Science Research program. Took every available computer science course.

ACTIVITIES



VARSITY CROSS COUNTRY

2018-2021

MATH TEAM

2017-2021

BIBLE CLUB

2017-2019

Practiced daily and accomplished personal running goals, motivated teammates to reach their potential, enhanced team spirit through communication and attitude.

Studied advanced mathematics and competed against other schools.

Facilitated charitable service activities, conversations, discussions, activities, and debates.

HONORS



Award Winning Graphic Designs (T-Shirts, brochures, bookmarks)

Outstanding Effort in Chemistry - 2019

Outstanding Effort in ELA - 2019

Principal's Honor Role x12

Somers Science Fair 3rd Place in Computer Science/Mathematics - 2019

Outstanding Effort in AP Physics - 2020

Excellence in AP CS Principles - 2020

AP Scholar with Distinction Award - 2020

CB National Rural & Small Town Scholar - 2020

Pawling Varsity P (x2) - 2018/2019

Rensselaer Medal - 2020

RIT Computing Medal - 2020

Science National Honor Society Member

Spanish National Honor Society Member

Math National Honor Society Treasurer