

# William Toth

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## EDUCATION

### DARTMOUTH COLLEGE

BA IN COMPUTER SCIENCE

MINOR IN MATHEMATICS

June 2023 | Hanover, NH

Cum. GPA: 3.85 / 4.00

### HARVARD-WESTLAKE SCHOOL

June 2019 | Studio City, California

Cum. GPA: 3.8 (4.3 weighted)

SAT: 1530

## RELEVANT COURSEWORK

Algorithms • Data Structures • Software Design  
 Full Stack Development • Computer Graphics  
 Object Oriented Programming  
 Machine Learning Architectures  
 Differential Equations  
 Quantum Mechanics • Linear Algebra  
 Design Thinking

## LANGUAGES/SKILLS

Java • Python • C/C++ •  $\text{\LaTeX}$  • R  
 Bash • Git • OpenGL  
 SQL • Microsoft Office

## EXPERIENCE AND RESEARCH

### PHYSICAL SYSTEMS MODELING (INCOMING)

RESEARCH INTERN

March 2021 - Present | Dartmouth College

- Implementing neural networks to predict the behavior of and simulate a given physical system

### WEB DEVELOPER (INCOMING)

DIFUSE LAB AT DARTMOUTH

March 2021 - Present | Dartmouth College

- Working on a team to create a web application that analyzes zoom transcripts and from them, generates visualizations

### FRESH PRINTS

CAMPUS MANAGER FOR LOCAL SUBSIDIARY

May 2020 - Present | New York, NY

- Started and grew a business at Dartmouth to sell custom apparel to student organizations
- Oversee a market of 4,500 students and 160 organizations, sold over \$20K during the pandemic

## PROJECTS

### SEARCH ENGINE | GITHUB

February 2021 | Dartmouth College

- Created a search engine separated into three modules: a crawler that crawls the internet, saving URLs and HTML files, an indexer that loads each word that appears into an inverted index data structure, and querier that returns URLs based on a user's search by using this inverted index data structure

### DATA SCIENCE / ML PROJECT | GITHUB

EVOLUTION OF POPULAR MUSIC: 1960-2010

June 2020 | UCLA Ext.

- Analyzed every song in the Billboard Hot 100 from 1960-2010, performing exploratory data analysis, including visual/graphical representation, density distribution, and advanced subsetting
- Implemented machine learning algorithms, such as random decision forests, to predict the given style and era of a track

### HIDDEN MARKOV MODELING: PART OF SPEECH TAGGER | GITHUB

November 2020 | Dartmouth College

- Used hidden Markov modeling and the Viterbi algorithm to predict parts of speech for a body of text, implementing the map, set, and list ADTs
- Trained the model to the Brown Corpus, giving an overall accuracy of 78%

## LEADERSHIP AND SERVICE

### DARTMOUTH STUDENT PRISON INITIATIVE

Co-FOUNDER AND HEAD OF OUTREACH

June 2020 - Present | Hanover, NH

- Co-founded a student organization centered around prison abolition, reform, and inmate advocacy
- Currently, the club is reading theory on oppression, incarceration, etc. in hopes to visit prisons in the coming years to gain the perspective of the incarcerated

## AWARDS AND DISTINCTIONS

### SOPHOMORE RESEARCH SCHOLARSHIP | 2020-2021

FOR EMBEDDING PHYSICAL PRIORS INTO MACHINE LEARNING ARCHITECTURES

### CEE ALUMNI COMMUNITY SERVICE GRANT | 2018

### NATIONAL MERIT COMMENDED SCHOLAR | 2018