

Zachary Crenshaw

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EDUCATION

UNIVERSITY OF CHICAGO B.A. / B.S.

Linguistics, Computer Science
GPA: 3.81 / 4.0
Expected June 2021

PROFILE

I strive to combine my expertise in computer science, my knowledge of linguistics, and my passion for education to create software that improves users' quality of life.

My primary interests include:

- Education Technology
- NLP + NLG
- Accessibility Technology

SKILLS & INTERESTS

PROGRAMMING

Proficient:

Python • Java • Javascript • C

Familiar:

R • HTML • CSS • PostgreSQL • \LaTeX

LANGUAGES

Proficient:

Spanish

Beginner:

American Sign Language • Catalan

INTERESTS

A Cappella • Constructed Languages
Learning Languages • Signed Languages

COURSEWORK

COMPUTER SCIENCE

NLP + Machine Learning

Universal Design

Data Structures + Graph Theory

Education Theory + Game Design

LINGUISTICS

Sign Language Linguistics

Language Planning + Revitalization

Complexity Theory

Learnability Theory

PUBLICATIONS

"Scratch Encore: The Design and Pilot of a Culturally-Relevant Intermediate Scratch Curriculum", Published in *SIGSCE* '20

PROJECTS

ASL ALPHABET RECOGNITION

March 2020

- Designed and developed a Convolutional Neural Network in Pytorch that recognizes tokens of the manual alphabet of American Sign Language (ASL) with nearly 98% accuracy at test time
- Project code and writeup available on **Github**

TO SPACE AND BACK: A FRACTION LEARNING GAME

Oct 2018 - Dec 2018

- Utilized pair programming, Universal Design concepts, and Common Core Curriculum guidelines to develop an educational game for 3rd-5th graders
- **Java code**, a **slide presentation**, and **full design write-up** available on GitHub

RESEARCH

UCHICAGO CANON LAB | Research Assistant

Apr 2019 - Jun 2019 ; Jan 2020 - Jun 2020 | Chicago, IL

- Creates Javascript and Python scripts to analyze common student mistakes and grading script errors to improve future iterations of a **Scratch-based CS curriculum** for 4th-6th graders
- Crafts detailed reports of specific insights and suggestions for the course based on quantitative research

SIGN LANGUAGE LINGUISTICS LAB | Research Assistant

Feb 2018 - Oct 2019 | Chicago, IL

- Developed data cleaning methods for the **Lexicon-Free Fingerspelling Recognition from Video** project to improve machine learning training set
- Annotated fingerspelling data in ELAN, edited other annotators' work to ensure quality training data, designed and implemented system to track edits

EXPERIENCE

UNIVERSITY OF CHICAGO | Teaching Assistant

Oct 2019 - Dec 2019 | Chicago, IL

- Teaching Assistant for the course **CMSC 20900: Computers for Learning**.
- Evaluated and provided timely feedback on reading responses and lab assignments that measured and promoted success of 40 students
- Administered weekly in-person office hours and online help via Piazza to provide assistance with understanding and completing assignments

JOHNS HOPKINS Center for Talented Youth | Teaching Assistant

Jun 2019 - Aug 2019 | Baltimore, MD; Lancaster, PA

- Co-taught the summer course: **Linguistics: The Science of Language**, a course for students age 12-16
- Facilitated interactive learning activities, contributed to narrative-style student evaluations, and provided instructional support to ensure student engagement and success

THE FRANKLIN INSTITUTE | Discovery Camp Counselor

Jul 2017 - Sep 2018 (Seasonal) | Philadelphia, PA

- Facilitated classroom activities to promote interactive learning on STEM topics such as Physics, Chemistry, Biology, and Computer Science to groups of 15+ children aged 4-14
- Counselor-In-Training: Jun 2014 - Sep 2016 (Seasonal)