msabin.github.io msabin27@gmail.com

EXPERIENCE

Recurse Center - Participant

2023-present

- A self-directed retreat for programmers where I:
 - Created my own projects (below), gave and received code review, and collaborated and pair-programmed daily with a vibrant community
 - Organized workshops on developer tooling, music software, and Accessibility
 - Gave theory talks on the Fourier transform and its applications
- <u>rhythmonics</u>: interactive GUI visualizing the relationship between polyrhythms and harmony
 - Written in **Python** using the pygame library, sound design from scratch
 - Designed, coded, and documented from scratch to be graphically intuitive, aesthetically pretty, and educational
- <u>waveformr</u> (<u>demo</u>): GUI playground to shape soundwaves in time domain or frequency domain
 - Developed with the React framework in JavaScript, using the WebAudio and WebMIDI APIs
 - Can draw arbitrary waveform in time domain or frequency domain to loop at arbitrary pitches (controllable by the GUI or a MIDI keyboard)

ACADEMIC EXPERIENCE

PostDoc Radboud University, ERC-funded <u>COHUBICOL</u> Project

2020-2021

- Collaborated with Lawyers and Legal Philosophers to account for Machine Learning's effect on legal outcomes, legal decision-making, and on the Rule of Law
- Explained Machine Learning concepts and paradigms to this non-technical audience and collaborated to create vocabularies for ML in the legal system

PhD UC Berkeley, Computer Science

2014-2020

- Organized workshops and presented my research that achieved <u>new results</u> in Learning Algorithms, Cryptography, and Pseudorandomness, published in my field's top conferences
- Presented my work at Theory seminars at MIT, Stanford, UCSD, etc., and collaborted with professors and students there to publish new results

BA CSU Sacramento, Math & Computer Science, minor in Statistics

2009-2014

- Coursework primarily in Java, with specialized courses focusing on, e.g., C,
 Octave/MATLAB, R, and Scheme
- Graduated with Highest Honors, Commencement Speaker

TEACHING AND OUTREACH

<u>Extensive</u> teaching and outreach across a wide range of age groups and levels of expertise, for example:

- Teaching graduate Cryptography, upper division Ethics in Engineering, and Computability and Complexity Theory at UC Berkeley
- Taught high schoolers an Introduction to Python course, a course on Zero-Knowledge Proofs, and Dinner With a Scientist program for Oakland K-12 schools
- Prominently featured in <u>a short film</u> explaining Complexity Theory to a lay audience