Manuel Sabin, Ph.D.

San Francisco, CA | (916) 496-6413

msabin.github.io

msabin27@gmail.com

TECHNICAL EXPERIENCE

Recurse Center - Software Developer in Residence — Aug-Oct 2023

- 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
- **rhythmonics**: 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
- **waveformr** (**demo**): 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 waveforms in time domain or frequency domain to loop at arbitrary pitches (controllable by the GUI or a MIDI keyboard)
- **chordinate** (**demo**): Communal virtual keyboard for remote piano tutoring using WebSockets
  - Developed with **Express.js** for a **Node.js** backend using the **socket.io** library. Frontend with **React** and the **WebAudio** and **WebMIDI** APIs
  - Talk music theory and tutor piano with this visual chatroom for MIDI data

Mentorship Roles and Graduate Student Instructor (GSI), UC Berkeley — 2014-2020

- Taught high schoolers an Introduction to Python course I created, mentored undergraduate CS students on research projects, and extensive outreach
- GSI for Intro Statistics, Upper Div Complexity Theory, Grad Cryptography, and prominently featured in a short pop-sci film about Complexity Theory

ACADEMIC EXPERIENCE

PostDoc Radboud University, ERC-funded *COHUBICOL* Project — May-Dec 2020

- 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 new results in Learning Algorithms, Cryptography, Pseudorandomness, and Complexity Theory published in my field's top conferences
- Presented my work at Theory seminars at MIT, Stanford, UCSD, etc., and collaborated 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