Manuel Sabin, Ph.D.

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EXPERIENCE

Recurse Center - Participant 2023-present

- **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** (in progress): playground to shape soundwaves in time domain or frequency domain
  - Written in **JavaScript** with the **p5.js** library, using the **WebAudio** and **WebMIDI** APIs
  - Can draw arbitrary waveform in time domain or frequency domain to loop at arbitrary pitches (controllable by MIDI or arrow keys)
  - In progress: building a GUI around the canvas with the **React** framework to offer controls and ability to import/export waveforms via drag-and-drop
- **minichat**: anonymous minimum viable chat app using websockets
  - **JavaScript SocketIO** client, **Flask** server using the **Python SocketIO** library built with minimum functionality to explore websockets
- Organized workshops on developer tooling, music software, and Accessibility, gave theory talks on the Fourier transform, and did a learning deep dive into **CSS**, **git**, and lightweight databases with **Node.js** and **SQLite**
- Continuing my tenure here by focusing on building apps with the **React** framework and finishing in-progress projects

ACADEMIC EXPERIENCE

PostDoc Radboud University, ERC-funded *COHUBICOL* 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
- Served a translational role, explicating how Machine Learning operates and co-creating vocabularies at the intersection of Law and CS

PhD UC Berkeley, *Computer Science* 2014-2020

- Published novel results for Learning Algorithms, Cryptography, and Pseudorandomness in premiere conferences, where I also organized workshops and presented
- Spent semesters researching at CUHK, MIT, Stanford, UCSD, etc., collaborating with professors and students, presenting my work, and publishing results

BA CSU Sacramento, *Math & Computer Science, minor in Statistics* 2009-2014

- Coursework primarily in **Java** with Systems in **C**. Experience with in **R**, **Scheme**, **Octave**, and **Prolog**.
- Graduated with Highest Honors, Commencement Speaker

TEACHING AND OUTREACH

Extensive teaching and outreach, ranging from teaching graduate Cryptography and upper division Ethics in Engineering at UC Berkeley, to outreach for high school students teaching, e.g., Introduction to Python and a course on Zero-Knowledge Proofs, to being in a short film explaining Complexity Theory to a lay audience