

**DOUGLAS LERNER**  
Web Developer

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## EXPERIENCE

### **Recurse Center, November 2018- February 2019**

Self-directed full-time 3 month programming retreat where I worked on a variety of projects, both as part of a team and alone, which touched on areas of programming that include browser extension development, game development, machine learning, natural language processing, genetic algorithms, and computer generated music.

*Some projects that I worked on while at the Recurse Center:*

**LeetCode Pairing Extension** - A Chrome extension which enables coders to pair program over the internet and solve LeetCode.com algorithm coding challenges together. Users can type into a shared text editor and video chat in real time in the browser.

**Harpsichord Hero** - A digital harpsichord with a built-in knowledge of harmony and musical style, which allows users to effortlessly improvise complex melodies and chord progressions.

**Neuro-Evolution Cocktail Party** - A simulation of human social interactions, which evolves social agents that can adapt to one another's behaviors. Uses a JavaScript implementation of the NEAT (Neuro Evolution through Augmented Topology) genetic algorithm, which evolves neural networks through the process of Darwinian evolution.

**Cyberpunks Rock Climbing** - A multiplayer, cooperative, physics-based rock climbing game, where each player controls one limb of the climber. The players must scale the cliff without putting too much weight on any one limb, or they will fall off.

**EvolutionScript** - An implementation of genetic programming in the browser where the user enters a series of integers representing the desired output of a program, and a population of randomly generated abstract syntax trees are converted into JavaScript programs and evaluated. The fittest ASTs then reproduce, mutate, and evolve, producing programs who's output approximates the user's inputs.

**Mandarin Shadowboxing** - A tool for learning spoken Mandarin Chinese which breaks down complex sentences into their simplest components allowing for rapid language acquisition. Based on the "shadowing" technique in which students learn phrases in a foreign language through imitation of recordings of native speakers.

### **After School English Program, November 2016- May 2018, Wuhan, China**

- Organized and Managed Program, Designed Curriculum, and Taught Students Aged 3-11
- Engaged Students using Total Physical Response, Role Play, Song, Multimedia and Crafts

### **University of Geosciences, September 2016- July 2018, Wuhan, China**

- Taught European Cultural History and Conversational English to English Major Undergraduates
- Designed Custom Bilingual Curriculum making use of Primary Historical Sources and Multimedia

### **Various Teaching Roles, 2012 - 2016, China**

- Taught Spoken and Written English, Literature, and Film at Three Gorges University and Wuhan Institute of Tech.
- Taught Business English and Prepared Engineers at PAS Appliance Solutions for Travel Abroad and for Communication with Company Branches in other Countries

## SKILLS

JavaScript, HTML5, CSS3, React, Node, Express, WebRTC, Phaser, Websockets, Web Audio, Three.js, Tone.js, HTML Canvas, Webpack, JQuery, Mandarin Chinese, Chinese-English Translation

## EDUCATION

### **Free Code Camp, Spring 2018**

Certificate in JavaScript, Algorithms and Data Structures

**Bachelor of Science, Biochemistry, May 2011, Stony Brook University, New York**