

Ph.D. Candidate  
Center for Computer Research in Music and Acoustics (CCRMA)  
Stanford University  
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Interests: Artful Design, Virtual Reality, Audiovisual Interaction, Humanistic Engineering

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## EDUCATION

### STANFORD UNIVERSITY

Ph.D. Candidate – Computer-based Music Theory and Acoustics 2019 - Present  
- Ric Wieland Graduate Fellowship (2022 – 2024)  
- Advisor: Ge Wang

### STANFORD UNIVERSITY

M.A. – Music, Science, and Technology 2017 - 2019  
- Denning Family Fellowship for the Arts (2018 – 2019)  
- Advisor: Ge Wang

### JOHNS HOPKINS UNIVERSITY

M.S. – Electrical and Computer Engineering 2012 - 2013  
- Advisor: James E. West

### JOHNS HOPKINS UNIVERSITY

B.S. – Mechanical Engineering (Music Minor) 2008 - 2012

### PORTSMOUTH ABBEY SCHOOL

High School – Portsmouth, RI 2004 - 2008

## WORK EXPERIENCE

### STANFORD UNIVERSITY

*Research Assistant* 2022 – 2024  
*TA Trainer in the Department of Music* 2022 – 2024

### STANFORD UNIVERSITY

*Teaching Assistant* 2020 – 2022

### SENA TECHNOLOGIES

*Research Engineer in Acoustics* 2014 – 2017

### JOHNS HOPKINS UNIVERSITY

*Teaching Assistant* 2012

## TEACHING EXPERIENCE

### STANFORD UNIVERSITY

#### *Instructor*

*Research and Development for Stanford VR Orchestra* 2024 Winter  
*Stanford Virtual Reality Orchestra (SVOrk)* 2024 Spring

#### *Teaching Assistant*

*Music, Computing, Design: The Art of Design* 2020 Fall / 2021 Fall  
*Intermediate Tonal Theory* 2022 Spring  
*Compositional Algorithms, Psychoacoustics, and Computational Music* 2022 Winter  
*Ear Training I / Ear Training II* 2021 Winter  
*Psychophysics and Music Cognition* 2021 Spring

### JOHNS HOPKINS UNIVERSITY

#### *Teaching Assistant*

*Circuits* 2013 Fall

## SELECTED WORKS

### **SVOrk (STANFORD VR ORCHESTRA)**

*Designer* 2023 – Present

The Stanford VR Orchestra (SVOrk) is an unprecedented form of computer music ensemble and a concert-going experience, where both performers and audience are in a shared fully-immersive virtual environment.

### **ABOrk (AI-MERICAN BUREAUCRACY ORCHESTRA)**

*Designer* 2023

ABOrk is a satirical expressive music video on how Turing tests are frequently experimented on the creative fields like art, music, and games – things we enjoy the most.

### **PROJECT VVRMA: ADVENTURES IN COMPUTER MUSIC LAND!**

*Designer* 2022 – Present

Project VVRMA is to be an interactive, audiovisual, fully immersive field trip to a VR reimagining of CCRMA, Stanford's computer music research center. VVRMA will take the form of a publicly available VR app aimed at a general audience with a vision of "VR Exploratorium for Music and Technology".

### **DOES PERFORMANCE MONITORING DIFFER BETWEEN SCORED AND IMPROVISED MUSICAL ACTIONS?: A TURN-TAKING PIANO-DUET EEG STUDY**

*Researcher, Author* 2019 – Present

This is empirical research in auditory neuroscience, where we investigate into neural correlates of performance monitoring during score-playing or improvisation piano-duet. (Manuscript, in revision).

## **AURA / AURA.VR**

*Designer*

2019 / 2021

*Aura* is a SLOrk (Stanford Laptop Orchestra) ensemble performance using physical lanterns that change in color and brightness based on the sound played by the performers. *Aura.VR* translates this physical ensemble performance into virtual reality.

## **MIDI.CITI. / MIDI.CITI.VR**

*Designer*

2019 –2020

*MIDI.CITI.* is an interactive audiovisual software where a generative drum machine is mapped to an aesthetic visual cityscape. *MIDI.CITI.VR* has *MIDI.CITI.* transplanted into the medium of virtual reality.

## **THE FISHERMAN: LAST-WILL ON HUMAN SENTIMENTS**

*Designer*

2018

*The Fisherman* has three chapters of audiovisual narratives of human perspectives on need vs value, time, and empathy that can be experienced in VR. These narratives contain audiovisual interactions based on real-time computer music algorithms.

## **MUSIC AND EVOLUTION**

*Designer*

2017

*Music and Evolution* is an interactive audiovisual essay on the development of music in parallel to human evolution.

## **ACOUSTIC MONITORING SYSTEM AND METHODS – PATENT US20140126732**

*Co-inventor*

2010 – 2013

## **DESIGN AND ANALYSIS OF A RESPIRATORY SOUND SIMULATOR FOR TESTING CHEST AUSCULTATION STETHOCOPES**

*Researcher*

2013

## **TALKS**

**Stanford Students in Entertainment: VR/AR Talk** (*Panelist*)

2023

**Art + Tech Salon, Stanford University** (*Speaker*)

2022

**“Video Games: An Artful Medium!?”** (*Guest Lecturer*)

2021 - 2023

**Harker Programming Invitational** (*Panelist*)

2021

**Artful Design Television** (*Host*)

2020

**Stanford XR, Stanford University** (*Speaker*)

2019

## **AWARDS**

**Ric Weiland Graduate Fellowship in Humanities and Sciences**

2022

*Two-year awards made to exceptional rising fourth year doctoral candidates in the humanities, social sciences, mathematics, and statistics.*

**Centennial Teaching Assistant Award**

2022

*CTA recognizes outstanding teaching assistants (TAs) for their tremendous service and dedication in providing excellent classroom instruction for Stanford Students.*

**Denning Fellowship for the Arts**

2018

*Full Scholarship for Stanford's CCRMA MST program*

**Pi Tau Sigma**

*International Mechanical Engineering Honor Society*

2012