

# Hongwei (Vincent) Cai

he/him/his

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## EDUCATION

- MCS, Computer Science** | University of Iowa | Iowa City, IA Anticipated May 2025  
Relevant Coursework: Data Structures, Algorithms, Computer Organization, Programming Language Concept, Operating System
- Ph.D., Composition** | University of Iowa | Iowa City, IA Anticipated Dec 2023
- Awarded Marcus Bach Fellowship, for outstanding doctoral dissertation
  - Received Graduate College Summer Fellowship Award
  - Awarded Henry and Parker Pelzer Fellowship Award (x2)
- M.M. Composition** | Oklahoma City University | Oklahoma City, OK May 2015
- Awarded "Graduate Music Talent Scholarship" (x2)
- B.Lit. Composition and Theory** | Shenyang Conservatory of Music | Shenyang, China Jul 2012
- Attained "Outstanding Student" honor title and awarded SYCM Merit Scholarship
  - Won First Place for the annual Piano Competition

## SKILLS

### Technical Skills

- C/C++, Java, Perl, Haskell
- Python, JavaScript, PHP, Bash, PowerShell
- SQL, MySQL
- HTML5, CSS3
- AWS

### Other Skills

- Music composition
- Music engraving
- Teaching
- Piano performance
- Audio processing and editing
- Public Speaking

## COMPUTER SCIENCE PROJECTS

- Astrology Web App** | [https://github.com/hongwei-cai/astrology\\_web\\_app](https://github.com/hongwei-cai/astrology_web_app) Ongoing development
- Built Django-based app with zodiac calculations and horoscopes, demonstrating web and database skills
  - Selected astrology content, improving engagement via profiles, notifications, and recommendations
  - Used data analysis to enhance engagement, introducing personalized recommendations for better UX
- Combination Tone Generator** | [https://github.com/hongwei-cai/combination\\_tone\\_generator](https://github.com/hongwei-cai/combination_tone_generator) Aug 2023
- Implemented input validation for error reduction and enhanced tool reliability
  - Designed a user-friendly responsive interface with CSS adaptable to various screen sizes
  - Developed an efficient note frequency caching mechanism for improved responsiveness
  - Leveraged Python, Flask, JavaScript, HTML and CSS expertise for a comprehensive project implementation
- Website Building and Design** | <https://github.com/hongwei-cai/hongweicai.github.io> Jul 2023
- Rebuilt personal website from scratch, refining HTML, CSS and JavaScript skills for a dynamic user experience
- Build ARM Processor** | associated with CS:2630 Computer Organization Apr 2022
- Applied knowledge of combinational logic to build important components of the ARM processor
  - Built digital circuits according to a specification
  - Utilized robust testing methodology in digital logic design
  - Learned how to load binary code from the assembler into the instruction memory
  - Created ARM programs that adequately test the processor
- Collapsing Shells** | music work for double bass and live electronic Mar 2021
- Programmed a real-time sound sampling program with Max – a visual programming language for music and multimedia – to interact with the bassist's playing

## TEACHING EXPERIENCE

- Teaching Assistant** | Computer Science Department | University of Iowa | Iowa City, IA Spring 2023
- Led two weekly lab sessions for CS:2630 Computer Organization for 30+ students in active problem solving

- Instructed C programming, Bash, assembly language programming, X86 ISA, memory management, and CPU pipelining
- Established open communication via office hours, email, and resolved issues in collaboration with fellow TA

**Instructor** | School of Music | University of Iowa | Iowa City, IA

2017 – 2020

- Taught Music Composition course MUS: 1020 and MUS:1139
- Coached non-major students in one-on-one setting to enhance their composition skills
- Developed lesson plans from weekly course outlines and crafted examples to suit needs of the class
- Assessed assignments and final project

## RESEARCH EXPERIENCE

**Research Assistant** | Center for New Music | University of Iowa | Iowa City, IA

August 2018 – May 2019

- Studied the musical scores in detail, gaining a deep understanding of the composer's intentions, musical structure, and interpretive nuances
- Assisted in coordinating concerts, workshops, and various events at the Center for New Music
- Offered artistic input during rehearsals, discussions with the director, and interpretation of musical pieces
- Offered technical support for equipment and displays employed in new music research to enhance concert experiences
- Assisted in ensuring the ensemble's performance meets the recording requirements

## HONORS & AWARDS

**Marcus Bach Graduate Fellowship** | University of Iowa College of Liberal Arts and Sciences

Sep 2023

- Awarded \$10,500 cash award for promoting intercultural communication and understanding of diverse philosophies and religious perspectives

**Graduate College Summer Fellowship** | University of Iowa Graduate College

Jun 2021

- Awarded \$5,000 cash awards to support summer research

**Henry and Parker Pelzer Fellowship Award (x2)** | University of Iowa Graduate College

Apr 2017 and Apr 2019

- Awarded \$10,000 cash awards to one outstanding composer each year

**Graduate Music Talent Scholarship** | Oklahoma City University

2013 and 2014

- Received \$4,500 in cash awards each semester, totaling four semesters

## WORKSHOPS

- Introduction to HPC using Argon Cluster Jul 2023
- Cloud Computing Workshop Series (AWS) Summer 2023
- Engaging Across Cultures: Navigating Intercultural Conflicts Dec 2020
- Composing for Video Games with Thomas Chance May 2015

## ARTISTIC ACTIVITY

### Selected Compositions

**Path To The Third Pole (2023)** for sinfonietta

TBA

**Scapulis Suis (2021)** for SSA choir a cappella

TBA

**How Soon Hath Time (2021)**

TBA

– a musical work for mixed choir divisi a cappella on John Milton's Sonnet

**Dal niente, al niente (2021)**

– a song set to Shelley's "Ozymandias" for soprano, flute, and harp

- The Ensemble Dal Niente, University of Iowa

April 18, 2021

**Collapsing Shells for solo double bass and live electronics (2021)**

- Will Yager, double bass, University of Iowa
- Will Yager, double bass, University of Iowa

May 9, 2021

March 28, 2021

**String Quartet No.2 "Poppies Bursting into Bloom in the Wind and Rain" (2019, rev.2020)**

- The JACK Quartet, Merkin Concert Hall, NYC

March 10, 2021

**Impulse (2020)**

- Mark Rheume, trombone, University of Iowa

November 17, 2020

**Unrest (2020)**

- Arianna Edvenson, clarinet, University of Iowa

September 28, 2020

**Soaring Over a Storm (2019)**

- Yixue Snow Zhang, violin, University of Iowa

December 8, 2019

<ul style="list-style-type: none"> <li>Yixue Snow Zhang, violin, Indiana University</li> </ul>	November 9, 2019
<b>Tempest in Yellow (2019)</b>	
<ul style="list-style-type: none"> <li>Eva Richards, cello, University of Iowa</li> </ul>	September 8, 2019
<b>String Quartet No.1 ...to the shore... (2018)</b>	
<ul style="list-style-type: none"> <li>SCI Online National Concert and Workshops</li> </ul>	May 6, 2021
<ul style="list-style-type: none"> <li>Contemporary Directions Ensemble, University of Michigan</li> </ul>	April 10, 2021
<ul style="list-style-type: none"> <li>The JACK Quartet, University of Iowa</li> </ul>	March 13, 2019
<b>You Came From Our Hometown (2018)</b> , poem by Wang Wei (699-761)	
<ul style="list-style-type: none"> <li>Anika Kildegaard, soprano, University of Iowa</li> </ul>	September 9, 2018
<b>Moments for chamber orchestra (2017, rev. 2018)</b>	
<ul style="list-style-type: none"> <li>CCM Chamber Orchestra, University of Cincinnati</li> </ul>	October 19, 2018
<ul style="list-style-type: none"> <li>Center for New Music, University of Iowa</li> </ul>	April 6, 2018
<b>Nocturne for Clarinet, Cello, and Piano (2017)</b>	
<ul style="list-style-type: none"> <li>The Ensemble Accroche Note, University of Iowa</li> </ul>	April 27, 2019
<ul style="list-style-type: none"> <li>Maurício Silva, clarinet, Craig Hultgren, cello, Hongwei Cai, piano, University of Michigan</li> </ul>	November 11, 2017
<b>Selected Performances as a Pianist</b>	
<ul style="list-style-type: none"> <li>John Adams: <i>Gnarly Buttons</i>   University of Iowa</li> </ul>	December 2, 2018
<ul style="list-style-type: none"> <li>John Clay Allen: <i>Light Pillars</i>   University of Iowa</li> </ul>	April 6, 2018
<ul style="list-style-type: none"> <li>Qi Jing: <i>The Hesitation in Your Eyes</i>   University of Iowa</li> </ul>	April 6, 2018
<ul style="list-style-type: none"> <li>Carlos I. Toro-Tobón: <i>Oráculos</i>   University of Michigan</li> </ul>	November 11, 2017
<ul style="list-style-type: none"> <li>Joseph Norman: <i>Metagenesis</i>   University of Michigan</li> </ul>	November 11, 2017
<ul style="list-style-type: none"> <li>Jacob Simmons: <i>Permeate! Aberrate! Juxtapose!</i>   UMKC</li> </ul>	March 10, 2017

## CONFERENCES

- Midwest Graduate Music Consortium 2021
  - Presented string quartet "Attainment of the Other Shore" (Online conference due to COVID, 2021)
- Exchange of Midwest Collegiate Composers 2017 & 2018
  - Premiered orchestral work "Moments" in the opening concert (University of Iowa, 2018)
  - Participated in two works premiere as a pianist (UMKC, 2017)
- Midwest Composers Symposium 2017 – 2019
  - Premiered solo violin work "Soaring Over a Storm" (University of Indiana, 2019)
  - Presented chamber orchestral work "Moments" in the opening concert (University of Cincinnati, 2018)
  - Premiered chamber music work "Nocturne" (University of Michigan, 2017)

## CAMPUS INVOLVMENT

- Assisted 100 new Teaching Assistants during the TA Orientation as an experienced TA for the Q&A session Aug 2023

## AFFILIATIONS

- ACM (2023)
- Phi Beta Delta Honor Society for International Scholars (2021)
- American Society of Composers, Authors, and Publishers (2019)
- Society of Composers, Inc. (2019)
- Golden Key International Honor Society (2017)

## LANGUAGES

- English (Full professional proficiency)
- Mandarin Chinese (Primary proficiency)