

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 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 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
 - Enhanced website's SEO, boosting search engine visibility and improving organic traffic
- 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

May 9, 2021

- Will Yager, double bass, University of Iowa

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
• Yixue Snow Zhang, violin, Indiana University	November 9, 2019
Tempest in Yellow (2019)	
• Eva Richards, cello, University of Iowa	September 8, 2019
String Quartet No.1 ...to the shore... (2018)	
• SCI Online National Concert and Workshops	May 6, 2021
• Contemporary Directions Ensemble, University of Michigan	April 10, 2021
• The JACK Quartet, University of Iowa	March 13, 2019
You Came From Our Hometown (2018) , poem by Wang Wei (699-761)	
• Anika Kildegaard, soprano, University of Iowa	September 9, 2018
Moments for chamber orchestra (2017, rev. 2018)	
• CCM Chamber Orchestra, University of Cincinnati	October 19, 2018
• Center for New Music, University of Iowa	April 6, 2018
Nocturne for Clarinet, Cello, and Piano (2017)	
• The Ensemble Accroche Note, University of Iowa	April 27, 2019
• Mauricio Silva, clarinet, Craig Hultgren, cello, Hongwei Cai, piano, University of Michigan	November 11, 2017
Selected Performances as a Pianist	
• John Adams: <i>Gnarly Buttons</i> University of Iowa	December 2, 2018
• John Clay Allen: <i>Light Pillars</i> University of Iowa	April 6, 2018
• Qi Jing: <i>The Hesitation in Your Eyes</i> University of Iowa	April 6, 2018
• Carlos I. Toro-Tobón: <i>Oráculos</i> University of Michigan	November 11, 2017
• Joseph Norman: <i>Metagenesis</i> University of Michigan	November 11, 2017
• Jacob Simmons: <i>Permeate! Aberrate! Juxtapose!</i> UMKC	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)