

# Hongwei (Vincent) Cai

he/him/his

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## EDUCATION

**MCS, Computer Science** | University of Iowa | Iowa City, IA

Anticipated May 2025

GPA: 4.00/4.00

**Ph.D., Composition** | University of Iowa | Iowa City, IA

Anticipated Dec 2023

GPA: 3.77/4.00

- Awarded Marcus Bach Fellowship, for outstanding doctoral dissertation
- Awarded Henry and Parker Pelzer Fellowship Award (×2)

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## TECHNICAL SKILLS

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

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

**Build ARM Processor** | associated with CS:2630 Computer Organization

Apr 2022

- Designed a complex digital system, adding new instructions to the datapath and control during implementation
- Applied combinational logic to build ARM processor components in Logisim and created Python test programs
- Employed robust testing methodologies for digital logic design, ensuring accuracy and reliability

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## TEACHING EXPERIENCE

**Teaching Assistant** | Computer Science Department | University of Iowa | Iowa City, IA

Jan 2023 – May 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

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## HONORS & AWARDS

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

Sep 2023

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

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

Jun 2021

- Awarded \$5,000 to support summer research

**Henry and Parker Pelzer Fellowship Award (×2)** | University of Iowa Graduate College

Apr 2017 & Apr 2019

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

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## CAMPUS INVOLVMENT

- Provided support to 100 new Teaching Assistants during the Q&A session of the New TA Orientation

Aug 2023

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## WORKSHOPS

- Introduction to HPC using Argon Cluster
- Cloud Computing Workshop Series (AWS)

Jul 2023

Jun 2023 – Jul 2023

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## AFFILIATIONS

- ACM (2023)
- ASCAP (2019)