Helen Weixu Chen

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EDUCATION

University of Waterloo — Waterloo, ON
Bachelor of Computer Science, Co-op. — Sept 2019 - present
1 Term Dean's Honours List + 7 Term distinction

WORK EXPERIENCE

Rochester Institute of Technology — Rochester, NY
Undergraduate Research Assistant — April 2024 – present

- Collaborated with two Ph.D. students under the supervision of Prof. Eric Williams, Dr. Stacey Watson, and Prof. Tom Oh on Managing Privacy and Environment for Used and End-of-Life Electronic Devices.
- Designed **user studies** to evaluate the ease or difficulty of wiping data and the comfort level of participants with the process and its outcomes.
- Developed a plan to order electronic devices within a budget of USD 6000 based on their importance ranking, derived from analyzing survey data.

University of Waterloo — Waterloo, ON
Undergraduate Research Assistant — May 2023 – present

- Collaborated with Prof. Lesley Istead on optimizing user-provided string prompts for **generative AI tools**, streamlining the process for efficiently generating desired images.
- Built a user-friendly **web-based UI** using **React** by automating repetitive tasks and reducing the need for prompt-engineering from the user.
- Engineered and implemented a **back-end API server** in **Java**, seamlessly integrating it with the **web-based UI**.
- Connected **Apache Derby** to manage data, ensuring efficient storage and retrieval.
- Collaborated in researching and understanding prompt generation patterns and model development using **decision trees**.
- Authored and prepared essential documentation for a **research license application**, under the guidance and mentorship of Prof. Istead.
- Co-authored the **research paper** "Imagine a Dress": Exploring Task-Specific Prompt Assistants for Text-to-Image AI Tools, which has been accepted by **Graphic Interface 2024 conference**.

University of Waterloo — Waterloo, ON
Undergraduate Research Assistant — Dec 2023 – present

- Conducted research under the supervision of Prof. Dan Brown and Prof. Maura Grossman, focusing on a CS education project to determine whether teaching material on computing and discrimination is more effective online or in a face-to-face classroom.
- **Recruited research participants** among students enrolled in CS492 (The Social Implications of Computing), enhancing the study's reach and diversity.
- Implemented and configured survey questions on the **Qualtrics** platform, guaranteeing unique access links for each participant.
- Efficiently **distributed and collected research materials**, including **consent forms** and **pre- and post-study questionnaires**, ensuring comprehensive participant engagement and data accuracy.
- Regularly attended two classes weekly, performing in-depth **written observations** to contribute vital **qualitative data** to the research process.
- Analyzed collected data and summarized findings into two papers. These papers are currently under draft and are planned to be submitted to the SIGCSE Technical Symposium 2025 by July 2024.

University of Waterloo Waterloo, ON
Undergraduate Research Assistant Sept 2023 – Dec 2023

- Collaborated with two undergrad co-workers to define an **HCI** and **AI** problem statement for **using chatbots to reveal personal biases in decision-making**, under the guidance of graduate mentor Kris Frasheri, and jointly brainstormed potential solutions.
- Conducted comprehensive **literature reviews** to build a strong foundation for the project.
- Orchestrated the project planning process, encompassing both **high-level strategies** and the creation of **low-fidelity** wireframes and mockups, thus setting the stage for our research's practical steps.
- Collaboratively composed a **project proposal** presented a unified vision and strategy for our research initiative.

Thomson Reuters Toronto, ON
Data & Analytics Engineer Intern May 2022 – Dec 2022

- Contributed to the Corporate Tax Department by assisting in the development of the ONESOURCE Indirect Tax feature, enhancing automation and accuracy in tax and finance workflows, from calculation to final remittance and compliance.
- Successfully resolved approximately 120 tickets, which led to a 50% decrease in support calls related to navigation issues.
- Enhanced 12 **Java APIs** and created six new **APIs** to significantly improve functionality.
- Integrated **BigQuery** into the **NGRA-API** module, transforming the Deal reporting process with advanced data analytics and enabling deeper and actionable insights.
- Automated **database** table maintenance and cleanup utilities processes for efficiency.
- Produced comprehensive documentation, including **UML** and **Sequence Diagrams** for all **REST APIs** and programs, significantly aiding colleagues in understanding the software architecture.

University of Waterloo Waterloo, ON
Instructional Support Assistant (ISA) Sept 2021 – present

- Served as an ISA (part-time/full-time) across six terms, supporting over 2,000 students in four key Computer Science courses:
  - CS138 (Introduction to Data Abstraction and Implementation) part-time ISA Winter 2024
    - Conducted weekly office hours, offering a guiding light to students on **C++** questions and debugging challenges, fostering a deeper understanding and smoother coding journey.
  - CS137 (Programming Principles) full-time & part-time ISA Fall 2023 & Fall 2022
    - Orchestrated and delivered engaging 50-minute weekly tutorials on **C programming** to an audience of over 70 students, sparking curiosity and knowledge.
    - Actively engaged in Piazza, resolving over 200 **C programming** queries, becoming a pivotal knowledge resource for the student community.
  - CS136L (Tools and Techniques for Software Development) part-time ISA Spring 2022
    - Assisted instructors in course design, encompassing the creation of content for the **IDEs** modules and comprehensive review of the **Memory Checkers** and **Debuggers** modules.
    - Developed the course website by employing **HTML**, **JavaScript**, and **CSS** experience.
  - CS116 (Introduction to Computer Science 2) part-time & full-time ISA Winter 2022 & Fall 2021
    - Innovated **Linux shell scripts** for efficient testing of student code and streamlined assignment grading, optimizing the evaluation process.
    - Utilized **HTML** to edit course content and post annotations on EdX.
    - Hosted weekly office hours, decoding **Python's** mysteries for students and guiding them through debugging, enhancing their programming acumen.
- **Evaluations from students** for the courses I assisted with are available here. These **evaluations** were compiled by the Instructional Support Coordinator Scott King at the end of the term.