Yichen(Andy) Yu

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Education

Georgia Institute of Technology — *Atlanta, USA*
Master of Science in Computer Science — *Aug 2025 - Present*

University of Rochester — *Rochester, USA*
Master of Science in Computer Science — *Aug 2023 – May 2025*

- Advisor: *Prof. Zhen Bai and Prof. Dillon Dzikowicz*

University of Wisconsin–Madison — *Madison, USA*
VISP Student in Computer Science — *Jan 2023 – Jun 2023*

Feng Chia University — *Taichung, Taiwan*
Bachelor of Science in Computer Science — *Sep 2020 – Jun 2023*

- Advisor: *Prof. Ming-Yen Lin*

Providence University — *Taichung, Taiwan*
Bachelor of Science in Data Science and Big Data Analytics — *Sep 2019 – Jun 2020*

Research Experience

North Carolina State University — *Raleigh, USA*
Research Assistant (Mentor: *Prof. Qiao Jin*) — *Aug 2025 - Present*

Carnegie Mellon University — *Pittsburgh, USA*
Research Assistant — *Nov 2024 – Aug 2025*

- Conducting VR safety research, leveraging AI for safety classification, and developing highly immersive replacement solutions. (Advisor: *Dr. Qiao Jin*)

University of Rochester Medical Center - Dzikowicz Lab — *Rochester, USA*
Research Assistant — *Mar 2024 – Present*

- Digitized paper-based ECG charts into structured, machine-readable data formats for integration with clinical datasets and downstream physiological analysis.
- Analyzed wearable ECG signals recorded during physical activities (e.g., 6MWT and veloergometry) to assess cardiac responses in post-operative rehabilitation patients.
- Extracted heart rate dynamics, HRV features, and age-predicted max HR to evaluate exercise intensity, cardiac effort, and post-activity recovery trends.

ROC-HCI Group — *Rochester, USA*
Research Assistant — *Aug 2023 – Aug 2025*

- Used Unity to create AR educational games for K-12 kids on Android and Meta Quest 3.
- Used Unity to develop an MR system to alleviate separation anxiety disorder in kids.
- Designed an AR-based system for parents of kids with ASL to learn sign language with their kids.

Publications

Yichen Yu*, Yifan Jiang*, Mandy Lui, Qiao Jin. GenLARP: Enabling Immersive Live Action Role-Play through LLM-Generated Worlds and Characters (ISMAR Poster'25).
https://doi.org/10.1145/3746058.3758424

Qiaoran Wang*, **Yichen Yu***. Noetic Dream: A Personalized VR and Meditation System for Lucid Dream Training (UIST Poster'25).
https://doi.org/10.1145/3746058.3758424

Yichen Yu*, Huan-Song Xu*. RunPacer: A Smartwatch-Based Vibrotactile Feedback System for Symmetric Co-Running by Visually Impaired Individuals and Guides (ASSETS Poster'25).

https://doi.org/10.1145/3663547.3759738

Yichen Yu*, Qiaoran Wang*. NieNie: Real-Time Stress Detection and Interactive Squeezing Rhythm through Unity Gameplay and Language Model Guidance (Ubicomp SC'25).
https://doi.org/10.1145/3714394.3750586

Yichen Yu, Qiao Jin. Chameleon: Unobtrusive Substitution of Real-World Obstacles in VR with Risk-Level-Aware Adaptation. (CHI LBW'25). https://doi.org/10.1145/3706599.3719779

Xiaofei Zhou*, Yunfan Gong*, **Yichen Yu**, Yi Zhang, Jeremy Smith, Zhen Bai. Design AI for My Community: A Case Study in a Freedom-to-Read Summer Camp. (ISLS'25). https://doi.org/10.22318/icls2025.111198

Xiaofei Zhou*, Yunfan Gong*, **Yichen Yu**, Zhenyao Cai, Zhen Bai. Iterative Design of Embodied and Analogical Learning Experiences for Teaching AI Literacy to Children. (ACM TOCE'24).

Alexander Bae, **Yichen Yu**, Chi-Ju Lai, Wendy Brunner, Nicole Krupa, Mary Carey, Wai Cheong Tam, Dillon Dzikowicz. Structural Heart Abnormalities are Prevalent on the 12-lead ECG among Firefighters. (Journal of Occupational and Environmental Medicine). https://10.1097/JOM.0000000000003409

Alexander Bae, **Yichen Yu**, Chi-Ju Lai, Wendy Brunner, Nicole Krupa, Mary Carey, Wai Cheong Tam, Dillon Dzikowicz. 9-Year Longitudinal Assessment of the 12-lead Electrocardiogram of Volunteer Firefighters. (American Heart Association Scientific Sessions'24). https://doi.org/10.1161/circ.150.suppl$_1$.4137975

Academic Activities

Reviewer Experience: ACM C&C'25

Teaching Experience

CSC216 & CSC416 - AR/VR Design *Rochester, USA*
Teaching Assistant *Aug 2024 – Dec 2024*

Milele Chikasa Anana Elementary School *Madison, USA*
Teacher *Jan 2023 – Jun 2023*

- Taught K-12 elementary school students basic programming skills in the Scratch Club.

Work Experience

Porsche Engineering *Shanghai, China*
HMI System Engineer Intern *May 2024 – Aug 2024*

- Delivered 3 localized HMI systems for production models, shipped on vehicles sold in China since Q4 2024.
- Reduced cockpit UI prototyping time by 80% using a custom SDK, enabling under-60-second generation.
- Developed a framework supporting over 10 reusable UI components and 30+ voice interaction scenes.
- Built an immersive simulation lab that accelerated validation cycles by 50%, cutting review time.
- Coordinated with 4 departments in China and Germany, impacting 5+ development tracks.
- Designed voice interaction flows with 2-minute average setup time, now used in over 70% of evaluations.

Research Projects

Chameleon: Risk-Level-Aware Obstacle Substitution in VR

- Designed and implemented a VR system that detects real-world obstacles and unobtrusively substitutes them with contextually appropriate virtual objects. The substitution is dynamically adjusted based on a real-time risk-level analysis model to ensure user safety without disrupting the immersive VR experience.
- Conducted user studies and co-authored a CHI 2025 Late-Breaking Work paper.

Embodied and Analogical AI Experiences for Children - BeeTrap

- Developed engaging Android AR/VR games using Unity, specially tailored for K-12 students to introduce them to immersive and interactive learning experiences, making education both fun and effective.
- Introduced the concept of the Filter Bubble in a simplified way, students demonstrating understanding through thoughtfully designed interactive quizzes and assessments.
- Combined AR/VR elements to create a captivating experience, leading to a increase in user engagement and motivation compared to more traditional learning applications.

- Connected complex and abstract AI concepts to children's prior knowledge, helping them better grasp foundational AI principles through relatable and familiar ideas.

Competition Projects

Running Training Assistance App for the Blind - RunPacer
This project has been acquired for about 33,000 USD (1,000,000 NTD).
1st Prize in 2023 Apple IOS Mobile Application Innovation Competition, invited to attend WWDC.

- Helped blind users connect with running partners online, while used WatchKit, HealthKit, and ClockKit to track and display key health metrics during their runs.
- Leveraged CoreMotion and AVFoundation to monitor user motion and provided rhythmic audio cues, enabling over 95% of users to synchronize effectively with guide runners.
- Collected hydration and health data, offering personalized real-time reminders that contributed to a 30% decrease in potential dehydration incidents. SwiftUICharts analyzed performance metrics post-run, enhancing user experience by tracking progress visually in Summary View.
- Analyzed the collected data using SwiftUICharts after each session and presented the results in charts through Summary View, helping users track performance and health metrics.

Warning and Route Recommendation System for Roads with High Accident Rates
3rd Prize in 2022 Apple IOS Mobile Application Innovation Competition.

- Built with Flutter, the app runs on both Android and iOS, making it accessible on Google Play.
- Analyzed over 50,000 Taichung traffic accidents to identify trends by time and weather conditions.
- Classified accident data by time and weather to identify trends and periods with higher accident occurrences.
- Combined real-time environmental factors with historical data to predict potential accident-prone locations, helping users stay informed of current risks.

Skills

Programming: R, Python, C, Flutter, Swift, SQL, Java, Stat, C#

Languages: English, Mandarin, Shanghainese