Hen-Chen (Ryan) Yen

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MIT EECS Ph.D.

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RESEARCH INTERESTS

My research focuses on malleable interaction interfaces, in the context of AI/programming, exploring how coding can transcend the current rigid textual representations to better capture dynamic user intent and loosening the current structure to enable more freeform expression.

EDUCATION

- **PhD, CSAIL** MIT, United States
  MIT EECS Fellowship *Sep 2024 - June 2028*
  - **Research Advisors**: Dr. Arvind Satyanarayan at MIT VIS Lab
  - **Courses**: Robotic Manipulation

- **MMath in Computer Science (Thesis), School of Computer Science** University of Waterloo, Canada
  CGPA 4.0/4.0; Full Scholarship *Jan 2023 - June 2024*
  - **Research Advisors**: Dr. Jian Zhao at WatVis Lab
  - **Funding**: Graduate Research Studentships; Graduate Teaching Assistantships
  - **Courses**: Human-Computer Interaction, Introduction to Machine Learning, Art & Science of Empirical CS.
  - **Teaching Assistant**: Human-Computer Interaction, Introduction to Data Structure

- **Bachelor of Computer Science, Department of Computer Science** City University of Hong Kong
  Major GPA: 3.43/4.3; Full Scholarship *Aug 2018 - May 2022*
  - **Research Advisors**: Dr. Can Liu at ERFI Lab; Dr. Zhicong Lu at DEER Lab
  - **Courses**: Operating Systems, Algorithms, Artificial Intelligence, Machine Learning, Database, Data Analysis, Probability and Statistics and Network.

PUBLICATIONS

- **Ryan Yen**, Jian Zhao, and Daniel Vogel. **Code Shaping: Iterative Code Editing with Free-form Sketching.** *UIST Adjunct'24, Oct. 2024.*

- **Ryan Yen**, Jiawen Zhu, Sangho Suh, Haijun Xia, and Jian Zhao. **CoLadder: Manipulating Code Generation via Multi-Level Blocks.** *UIST'24, Oct. 2024.*

- **Ryan Yen** and Jian Zhao. **Memolet: Reifying the Reuse of User-AI Conversational Memories.** *UIST'24, Oct. 2024.*

- Ching-Yi Tsai, **Ryan Yen**, Daekun Kim, Daniel Vogel. **Gait Gestures: Examining Stride and Foot Strike Variation as an Input Method While Walking.** *UIST'24, Oct. 2024.*

- **Ryan Yen**, Nicole Sultanum, Jian Zhao. **To Search or To Gen? Exploring the Synergy between Generative AI and Web Search in Programming** *CHI'24 Late-Breaking Work*

- **Ryan Yen***, Li Feng*, Yuzhe You, Mingming Fan, Jian Zhao and Zhicong Lu. **CoPrompt: Supporting Prompt Sharing and Referring in Collaborative Natural Language Programming.** *CHI'24, Oct. 2023.*

- **Ryan Yen**, Li Feng, Brinda Mehra, Ching Christie Pang, Siying Hu and Zhicong Lu. **StoryChat: Designing a Narrative-Based Viewer Participation Tool for Live Streaming Chatrooms.** *CHI'23: Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems.*

- Siying Hu, **Ryan Yen**, Ziwei Yu, Mingjian Zhao, Katie Seaborn, Can Liu. **Wizundry: A Cooperative Wizard of Oz Platform for Simulating Future Speech-based Interfaces with Multiple Wizards.** *CSCW'23: Proceedings of the ACM on Human-Computer Interaction, 7, 1 - 34.*

- Brinda Mehra, Kejia Shen, **Ryan Yen**, Can Liu. **Gist and Verbatim: Understanding Speech to Inform New Interfaces for Verbal Text Composition.** *CUI'23: Proceedings of the 5th International Conference on Conversational User Interfaces.*

Research Experience

- **Research Assistant at MIT VIS Lab**
  supervisor: Dr. Arvind Satyanarayan
  Semi-formal programming
  Sep 2024 - current

- **Research Assistant at WatVis Lab**
  supervisor: Dr. Jian Zhao and Dr. Daniel Vogel
  Coprompt, CoLadder, Memolet, To Search or To Gen, and Code Shaping
  Jan 2023 - Jun 2024

- **Research Assistant at DEER Lab**
  supervisor: Dr. Zhicong Lu
  Undergraduate thesis on narrative-based live streaming chatroom moderation tools and algorithms
  Sep 2021 - Jun 2022
  A narrative-based viewer participation tool that utilizes a dynamic graphical plot to reflect chatroom negativity. We discovered that StoryChat encouraged viewers to contribute prosocial comments, increased viewer engagement, and fostered viewers' sense of community.

- **Research Assistant at ERFI Lab**
  supervisor: Dr. Can Liu
  Natural Language and Dication interface
  May 2021 - Jun 2022
  One of the projects focused on studying memory patterns and proposing innovative interaction concepts to enhance the efficiency of speech editing; Another project explored the challenges of multi-Wizard approaches and proposed a web-based WoZ platform.

Professional Experience

- **Research Intern, Huawei Research Center**
  Hong Kong
  AI Explainability in Pathology Diagnosis
  June 2021 - Aug 2021
  - **Applied Research**: MindSpore Pathology Diagnosis AI Challenge. Building a platform for holding the event and handling the submission of models; AI Explainability in pathology diagnosis

- **CTO, Co-founder, Nérocean**
  Hong Kong
  600,000 HKD funding from HK Government & HKTech300 from CityU & Hong Kong Science Park
  Apr 2021 - Oct 2021
  - **Funding**: 600,000 HKD funding from HK Government & HKTech300 from CityU & Hong Kong Science Park
  - **Technique**: Dissolved Oxygen prediction AI model, Ocean water health prediction   Network Fabric Controller is a logically centralized software controller to manage a distributed physical network fabric or a physical network underlay.

- **Full-stack Intern, Networld Technology Ltd.**
  Hong Kong
  Cross-platform Interface, data visualization; ReactJS; Docker; K8s; Google Cloud Platform; NodeJS
  Sep 2020 - May 2021
  - **Skills**: React Native, Data Visualization, Leveral, Docker, K8s containerized, Google Cloud, Server, CI/CD and SQL
  - **Tasks**: Campaign Websites, Admin Systems

Scholarship & Awards

- **MIT EECS Graduate Student Fellowship**: funding for the first academic year; 2024 - 2025
- **International Masters Award Excellence**: 7,500 CAD per year; 2023 - 2025
- **UWaterloo Grad Scholarship**: 4,000 CAD per year; 2023 - 2025
- **CityU International Student Scholarship**: 12,000 HKD per year; 2019 - 2022
- **HKSAR Government Scholarship Fund, Reaching Out Award**: 10,000 HKD; 2021
- **HK STEM Internship Scholarship**: 8,000 HKD; 2021

Community Leadership

- **Organizer, Dynamic Abstraction Workshop**: UIST'24
- **Lead, Google Developers Student Group**: Google DSC CityU, Google Solution Challenge
- **Lead, Microsoft Ambassador**: Microsoft Learn Ambassador Medal, Azure workshops
- **Lead, AWS Educate Ambassador**: Program Leader, AWS Cloud AI workshop, AWS leadership seminar

Talk and Seminar

- **Malleable interaction interface**: Tableau Research, Nov 2024
- **Malleable AI interface**: HCIX program, Aug 2024
- **Leadership and Event Organizing Sharing, AWS HK Student Lead**: AWS Ambassador Program Seminar, Nov 2021
- **Google Cloud Kubernetes deployment, Google DSC Lead**: Google Devfest, Nov 2020

Volunteer

- **Stage actor**: Mikado Children Theatre
- **Violinist**: QiYan Orchestra, Taipei Hospital
- **International Educational Volunteer**: QingMai, Thailand; Yunan, China