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Oliver Huang

Doctoral Student, Computer Science, ETHz

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Google Scholar

RESEARCH INTERESTS

Human-Computer Interaction, Human-Centered AI, AI in Education

My research examines how people learn with adaptive AI systems, with a focus on sensemaking, metacognition, and human-AI interaction in educational settings. I design human-centered interfaces that make reasoning visible, support reflection and self-explanation, and help learners build durable understanding while using AI. More broadly, I draw on cognitive and learning sciences to study how interactive systems can foster deeper engagement, agency, and independent thinking.

EDUCATION

Sep 2026 – **ETH Zürich**
PhD in *Computer Science*
Advisor: April Wang

Sep 2024 – Jun 2026 **University of Toronto**
MSc in *Computer Science*
CGPA: 4.0/4.0
Advisor: Carolina Nobre
Thesis: *Narrative Scaffolding: A Narrative-First Framework for Data-Driven Sensemaking*

Sep 2019 – May 2024 **University of Toronto**
HBSc in *Computer Science*
CGPA: 3.81/4.0

RESEARCH & WORK EXPERIENCE

Jun 2026 – Aug 2026 **Amii, University of Alberta**, *Visiting Researcher Assistant*

Sep 2024 – Jun 2026 **DGP Lab, University of Toronto**, *Graduate Researcher and Teaching Assistant*

May 2023 – Oct 2024 **DGP Lab, University of Toronto**, *Research Intern*
Research with *Majeed Kazemi, Tovi Grossman*
Built scalable LLM-powered programming tools using novel representation techniques to support student learning and reduce overreliance on AI.

Sept 2022 – Jan 2023 **HIVE Lab, University of Toronto**, *Research Intern*
Research with *Carolina Nobre*
Built and evaluated novel visualization systems to enhance time-series data exploration and pattern discovery.

May 2022 – Jun 2023 **DSDE Lab, Huawei Technologies**, *Assistant Research Engineer*
Research with *Paul Lee and Chen Chong*
Designed clusters management system for multi-master MySQL synchronization and conducted performance evaluations on lock latency and reclaim rate.
Contributed to VLDB 2023 Taurus MM: bringing multi-master to the cloud

May 2021 – Aug 2021 **Fortran Traffic System Limited**, *Full Stack Developer*
Developed back-end applications and database schemas for traffic simulation in V2X (Vehicle-to-Everything) and ITS (Intelligent Transportation Systems).

Jan 2021 – Apr 2021 **University of Toronto Application Development Association**, *Front-end Developer*
Built responsive web features for 30+ pages with enhanced user experience.

FULL CONFERENCE PAPERS

2026 Runlong Ye, **Oliver Huang**, Patrick Lee, Michael Liut, Carolina Nobre, Ha-Kyung Kong. Reflexis: Supporting Reflexivity and Rigor in Collaborative Qualitative Analysis though Design for Deliberation
CHI 2026 - In Proceedings of the ACM 2026 Conference of Human Factors in Computing Systems

2026 **Oliver Huang**, Muhammad Fatir, Steven Luo, Sangho Suh, Hariharan Subramonyam, Carolina Nobre. Narrative Scaffolding: A Narrative-First Framework for Data-Driven Sensemaking
IUI 2026 - In Proceedings of the 31st International Conference on Intelligent User Interfaces

2025 **Oliver Huang**, Carolina Nobre. ViStruct: Simulating Expert-Like Reasoning Through Task Decomposition and Visual Attention
VIS 2025 - IEEE Transactions on Visualization and Computer Graphics

2025 **Oliver Huang**, Patrick Lee, Carolina Nobre. From Reality to Recognition: Evaluating Visualization Analogies for Novice Chart Comprehension
EuroVis 2025 - The 27th Eurographics Conference on Visualization 2025

2025 Majeed Kazemitabaar, **Oliver Huang**, Sangho Suh, Austin Z Henley, Tovi Grossman. Exploring the Design Space of Cognitive Engagement Techniques with AI-Generated Code for Enhanced Learning
IUI 2025 - In Proceedings of the 30th International Conference on Intelligent User Interfaces

2025 Zijian Zhang, Pan Chen, Fangshi Du, Runlong Ye, **Oliver Huang**, Michael Liut, Alán Aspuru-Guzik. TreeReader: A Hierarchical Academic Paper Reader Powered by Language Models
VL/HCC 2025 - The 25th IEEE Symposium on Visual Languages and Human-Centric Computing

EXTENDED ABSTRACTS

2026 Runlong Ye, **Oliver Huang**, Jessica He, Michael Liut Exploring Emergig Norms of AI Disclosure in Programming Education
CHI 2026 Workshop in Understanding and Engaging Critical Resistance to AI in Education

2025 **Oliver Huang**, Carolina Nobre. Toward Supporting Narrative-Driven Data Exploration: Barriers and Design Opportunities
VIS 2025 Poster

2025 Runlong Ye, Patrick Yung Kang Lee, Matthew Varona, **Oliver Huang**, Carolina Nobre. ScholarMate: A Mixed-Initiative Tool for Qualitative Knowledge Work and Information Sensemaking
CHIWORK 2025 - Adjunct Proceedings of the 4th Annual Symposium on Human-Computer Interaction for Work

AWARDS & HONORS

2024-2026 **Computer Science Graduate Fellowship**
University of Toronto, Department of Computer Science
Amount: $85,000

2024 **Bell Graduate Scholarship**
University of Toronto, Department of Computer Science
Amount: $20,000

2023 **NSERC Undergraduate Student Research Award**
University of Toronto, Department of Computer Science
Amount: $7,500

2023 **UTAPS Undergraduate Student Scholarship**
University of Toronto, Faculty of Arts & Science
Amount: $10,400

2023 **Tom Hull Scholarship In Computer Science**
University of Toronto, Department of Computer Science
Amount: $1,200

2022 **New College Council In-course Scholarship**
University of Toronto, Faculty of Arts & Science
Amount: $750

2019-2024 **Dean's List**
University of Toronto, Faculty of Arts & Science

PROFESSIONAL SERVICES

2026 Journal Reviewer: **1**× Full Paper **ACM TIST**

2025 Program Committee Member & Reviewer: **4**× Full Paper **IUI 2026**

2025 External Reviewer: **5**× Full Paper, **6**× Poster **CHI 2026**

2025 External Reviewer: **1**× Full Paper, **2**× Workshop Paper, **VIS 2025**

2025 Peer Mentor: **CSSU Undergraduate Student Research Program**

2025 Peer Mentor: **Student-Industry Partner Project Showcase**

ADVISING

May 2025 - Oct 2025	**Muhammad Fatir**, Computer Science (class of 2027)
Jan 2025 - Oct 2025	**Steven Luo**, Computer Science (class of 2027)

TEACHING EXPERIENCE

Winter 2026	**CSC316: Data Visualization**, Coordinator: Carolina Nobre
Winter 2026	**CSC318: The Design of Interactive Computational Media**, Coordinator: Khai Truong
Fall 2025	**CSC316: Data Visualization**, Coordinator: Carolina Nobre
Fall 2025	**CSC309: Programming on the Web**, Coordinator: Pan Chen
Summer 2025	**CSC316: Data Visualization**, Coordinator: Carolina Nobre
Winter 2025	**CSC316: Data Visualization**, Coordinator: Carolina Nobre
Fall 2024	**CSC309: Programming on the Web**, Coordinator: Kianoosh Abbasi
Fall 2024	**CSCC10: Introduction to Human Computer Interaction**, Coordinator: Naureen Nizam
Fall 2024	**CSC207: Software Design**, Coordinator: Jonathan Calver

Technical Skills

Programming	Python, Typescript, Javascript, Java, C, C++
Data Analysis	R, SQL, Tableau, PowerBI, Matplotlib, Seaborn
Frameworks	Next, React, Node, D3, Django, Flask, FastAPI, Pandas, NumPy, OpenCV, TensorFlow, PyTorch