

Teaching Statement

Yue Jiang

I am passionate about being an educator who supports students from diverse backgrounds, abilities, and goals. Throughout my life, I've been fortunate to receive encouragement and guidance from many supervisors and teachers. Their unwavering support has profoundly shaped my journey. Inspired by the unforgettable professors and mentors who served as my role models, my goal is to become a mentor who can similarly inspire and guide others.

I have taught for **13 semesters across five countries on three continents**—Finland, Germany, the USA, Canada, and China—in courses ranging from **Human-Computer Interaction** and **Computer Graphics** to **Visual Computing**, **Deep Learning**, **Discrete Mathematics**, and **Data Structures**. Additionally, I have mentored **12 undergraduate and master's students from seven countries, including six women and one LGBTQ+ student**.

In my teaching and mentoring, I aim not only to help students build strong technical skills but also to offer the support and encouragement they need to pursue related opportunities with enthusiasm. My goals are 1) to create an inclusive and supportive learning environment where students from diverse backgrounds feel valued and receive both mental and technical support, 2) to help students develop their technical skills through constructive feedback, and 3) to provide support and opportunities for students to explore and engage in their areas of interest.

TEACHING EXPERIENCE.

My teaching journey has been shaped by a commitment to adapting to diverse educational environments and fostering student engagement across various academic levels.

Course Instructor. I was a course co-instructor for the graduate Human-Computer Interaction seminar course “*Computing the User and Their Interface*” at Saarland University in Germany, which had about 20 Master’s students. I collected relevant academic papers and guided the course structure. Inspired by Professor Alec Jacobson’s “*Seminar in Geometry and Animation*” at the University of Toronto, the seminar format involved assigning students specific roles such as Reviewer, who conducted paper reviews; Archaeologist, who identified and reported on one older paper cited by the current paper and one newer paper citing it; and Ph.D. student, who proposed hypothetical follow-up projects based on the paper’s success. Before each class, I held individual meetings with students to have a small discussion on their findings and took notes on their interests, which informed the direction of the in-class discussions that I led.

Guest Lecturer and Assignment Creator. I gave three guest lectures and developed three assignments on Visual Saliency and Visual Perception for two courses at Aalto University: an undergraduate course, “*Human Factors Engineering*” (with about 70 students), and a graduate course, “*Computational Design and Interaction*” (with about 40 students). I designed the lectures to provide a comprehensive overview of eye tracking, covering its background, modeling techniques, and practical applications. Furthermore, I created the assignments to include both theoretical and implementation components, drawing from recently published papers to help students grasp current research trends in eye tracking.

Teaching Assistant. I served as a teaching assistant for one semester in “*Theory of Computation*” and two semesters in “*Data Structures and Analysis*” courses at the University of Toronto and for three semesters in undergraduate and graduate “*Computer Graphics*” courses at the University of Maryland, College Park. For example, in the “*Data Structures and Analysis*” course, I led two tutorial sessions each semester, each including 40 students, to teach advanced material that complemented the lectures, explained proofs in exercises, held office hours, conducted pre-exam review sessions, and graded assignments. I have received commendations from students highlighting my teaching, such as: “*Yue is an amazing mentor in addition to her research!! Computer graphics course with her as TA is a core memory.*”¹

MENTORING EXPERIENCE.

I am fortunate to mentor 12 undergraduate and Master’s students from seven countries, including six women and one LGBTQ+ student. This experience not only enriched my understanding of global viewpoints but also enhanced my ability to adapt my mentorship to each student's unique experiences and aspirations.

¹<https://x.com/laurayuzheng/status/1795858442155917731?s=46&t=tkLKrwDGyAa9cqf8MDj8wQ>

Mentoring Student Research. I work closely with students to develop research projects that align with their experience, interests, and long-term goals, guiding them through all stages of the process—from brainstorming and implementation to evaluation and writing. I design projects that engage both the student's interests and my expertise, ensuring they find the work meaningful and gain the knowledge they seek while receiving effective support from me.

For instance, I recently mentored an undergraduate student, Aryan Garg, who was interested in applying Computer Vision technologies to Human-Computer Interaction (HCI). With his background in Generative Adversarial Networks (GANs) and my expertise in HCI and Computer Vision, particularly in user interface understanding and eye tracking, we explored applying generative models to UIs with eye tracking considerations, aiming to enable controllable UI generation considering users' visual flow. This project involved a literature review, data processing, network architecture design, implementation, evaluation, and paper writing. We collaborated at each step, creating detailed plans to guide our progress.

I believe that mentoring is not just about teaching, but also about learning from each other and growing together with students. I maintained a collection of relevant research papers, including those Aryan was interested in exploring, and worked with him to identify research gaps and devise solutions. Instead of having all the answers, I see my role as guiding students to explore ideas together and providing constructive feedback. For example, when our initial attempt to use GANs did not yield high-quality results, we switched to Diffusion models, which were new to both of us. I guided Aryan in reading and understanding the literature and provided detailed feedback on both model comprehension and implementation. Rather than imposing my ideas, I offered suggestions, encouraged him to express his own thoughts, and provided feedback and modifications based on his input. In our daily meetings, I supported him with both technical advice and encouragement, creating an environment of mutual growth and exploration. The project was submitted as a full paper to CHI 2025.

Throughout our collaboration, he has sent me some kind commendations, such as:

*"You're the most supportive advisor I've had so far! Honestly, I would love to keep collaborating with you till the time we're in academia", "Need more people like you in my life. Super supportive."*²

Leading Research Project Courses. I mentored four students in research project courses, where I designed and led small research projects. My approach to this kind of mentorship emphasizes the development of students' research skills, their understanding of the research process, and their ability to explore potential academic career paths.

For each project, I carefully tailored the scope to ensure that students could achieve meaningful results within a single semester. This balance between ambition and feasibility allowed students to experience the satisfaction of completing a research project while also gaining insight into the nature of academic research. I held weekly meetings with each student, providing consistent guidance throughout the entire project.

My role as a mentor extended beyond technical supervision; I aimed to help students discover their interests and assess whether a research career aligned with their aspirations. For example, in 2021, I mentored a student at Max Planck Institute, Germany, working on a 3D reconstruction project using Neural Radiance Fields (NeRF). Under my guidance, the student not only completed the project successfully but also decided to pursue a PhD in this area. Recently, he shared with me that he had published a paper on this topic at SIGGRAPH³, which made me proud to see the long-term impact of this mentorship.

Recognizing the importance of practical experience in research, I seek to create opportunities that challenge and engage students. Last year, I proposed and supervised a research project on eye tracking in a research project course. Two students under my mentorship worked on capturing and modeling eye-tracking data for UI transitions. I guided them through the entire research process, from using the eye tracker and processing the data to modeling, analyzing the results,

² <https://yuejiang-nj.github.io/mentoring1.html>

³ <https://vc.ai.mpi-inf.mpg.de/projects/HQ3DAvatar/>

and preparing their final presentation. The project received the highest score in the course, and both students expressed their enthusiasm and enjoyment of the experience: “*Thank you for your help throughout the project, Yue!*” and “*It was a fun project.*”⁴**Diversity and Careers.** Encouraging the growth of emerging talent and promoting diversity in technology has been a central focus of my mentoring experience. In 2018 and 2019, I served as a graduate mentor for Technica⁵, the world’s largest hackathon for underrepresented genders. In this role, I designed engaging research projects that enabled my mentees to explore hands-on technology work and gain practical experience in research methodologies.

Additionally, I contributed as a graduate mentor for the Maryland Center for Women in Computing (MCWIC) Peer Mentoring Program over two years. Here, I offered guidance and support to students, assisting them in navigating their academic and professional paths while building a sense of community and belonging in the computing field.

Moreover, I participated in the SIGGRAPH Research Career Development Committee's mentorship program, where I was paired with Rana Hanocka⁶. Throughout this program, we maintained regular contact, and I also extended my support to younger students by addressing their inquiries, offering assistance, and providing constructive feedback whenever they reached out.

FUTURE PLANS

Teaching. In the future, I plan to offer advanced graduate courses in Human-AI Interaction and Deep Learning for HCI, as well as specialized research projects and seminars. These courses will focus on methods that enhance interactions between humans and AI technologies, deepening our understanding of interaction structures and informing the design of innovative human-computer interfaces. I will also cover modeling methods to understand and simulate complex human behaviors by capturing individual differences.

At the undergraduate level, I can also teach advanced courses in AI, Deep Learning, Human-Computer Interaction, Computer Vision, and Computer Graphics, and foundational courses such as Discrete Mathematics and Data Structures.

Supervision. I plan to create an inclusive group where students with diverse backgrounds, abilities, and goals, first and foremost, feel heard and represented and then feel inspired and confident enough to pursue their most ambitious academic and/or professional goals.

International Experience. I am passionate about creating opportunities for younger students to explore current research trends and engage in hands-on research experiences. I am particularly inspired by the Summer Geometry Initiative⁷, organized by Prof. Justin Solomon, which aims to develop a similar program focused on Computational UI and Human Behavior. My goal is to establish a summer research program that introduces undergraduate and graduate students to this field. The program will feature tutorials on groundbreaking developments that have shaped UI and interaction design, as well as sessions on understanding and simulating human interactions and behaviors. Participants will work in teams on research projects, with guidance from invited faculty and research scientists specializing in these areas. Additionally, I am interested in contributing to the field by creating specialized courses for top conferences and delivering lectures at summer schools, further extending the reach and impact of this research area.

⁴ <https://yuejiang-nj.github.io/mentoring2.html>

⁵ <https://2018.gotechnica.org/>

⁶ <https://people.cs.uchicago.edu/~ranahanocka/>

⁷ <https://sgi.mit.edu/sgi-2024>