

## Adam Rule Teaching Statement

I owe a great debt to teachers and mentors who, among other things, taught me that research and practice are as much about *people* as ideas. Helping develop the next generation of researchers and practitioners is a driving force in my seeking a faculty position.

### TEACHING EXPERIENCE

As a teaching assistant for five different computer science and cognitive science courses at UC San Diego, I covered topics ranging from models of cognition and social critique of computing technology to full-stack web development. While class enrollment typically hovered around 200 students, for each course I led one or more studios of 20-50 students that focused on **experiential learning**. In one course, *Human-Computer Interaction Design*, we guided students through the process of designing, developing, and testing a fully functional web-app in just ten weeks. In studio each week, I helped students complete miniaturized versions of tasks they would need to perform later that week to stay on track with their quarter long-project, helping them practice skills such as Heuristic Evaluation and A/B testing in a setting where they could receive immediate feedback. In addition to leading a studio for this course, I developed the studio plans that the eight other TAs and I used to coordinate our teaching efforts and led TA meetings. I received my department's **Outstanding Teaching Award** that quarter based on my student's ratings and feedback.

I have also made **critiquing process** a key component of every course I teach. I routinely plan multi-week assignments and use intermediate weeks to provide feedback on design and implementation decisions rather than the state of the final deliverable. One assignment I helped design for *Cognitive Consequences of Technology* had students collect and clean a dataset about their own digital technology use and I leveraged a mid-project studio session to critique student's data collection and cleaning process. In addition to providing my own critique, I have also found it extremely valuable to have students regularly critique their peer's assignments using a rubric based on course concepts. This practice helps students not only learn to provide constructive critique but also reflect on how they might improve their own work.

Finally, I have made **writing and presentation key components** of every course I teach. As an engineering undergraduate, I was well aware of the stereotype that engineers could handle math and science but not the social or communication skills needed to make group projects succeed. Over time, I have worked to become a better communicator, earning multiple presentation and paper awards along the way. In my courses, I often have students complete weekly process or reading journals and multiple short presentations (not just one final paper or presentation) to get them more comfortable with writing and speaking about technical topics. While serving as a teaching assistant for our campus' introductory design course *Design of Everyday Things*, I used weekly process journals to solidify their understanding of course concepts and slowly build a course-long portfolio that several students used to help secure summer internships.

Most recently, I had the pleasure of helping faculty at the Oregon Health & Science University revamp their *Human-Computer Interaction in Biomedicine* course. As a mixed format course with six weeks of **online instruction** and one week of on-campus instruction, I focused on scaffolding online discussion through forum prompts and postings as well as sequencing topics so students arrived on-campus ready to complete a group project redesigning a clinical interface. One of the most rewarding aspects of this course was introducing mid-career healthcare professionals including physicians and nurses to HCI.

## MENTORING

In addition to teaching hundreds of students, I have had the pleasure of mentoring ten undergraduate students, three Master's students, and two medical students, many of whom have gone on to roles at companies such as Google and Microsoft or PhD programs at schools like the University of Maryland and University of Washington. As with my teaching, I focus research mentoring on involving students in team projects, learning the entire research process from ideation to paper, and developing communication skills. For mentoring in the classroom, I have found my diverse experience (spanning research in academia, UX research in industry at Amazon, R&D at one of Intel's university labs, and working with an international health non-profit) helpful in talking to students about skills required in different research and design roles and have given several guest lectures on the topic.

## DIVERSITY & INCLUSION

I have found two strategies particularly helpful in promoting diversity and inclusion in teaching and research. First, **providing copious structure** in rubrics, assignments, and lectures as well as structuring research groups as agile research studios [1] has helped less confident students succeed. Second, **intentionally recruiting students** for my research groups who may be at greater risk of experiencing imposter syndrome including not only racial and gender minorities, but also first-generation students, transfer students from community colleges, and international students.

## PROPOSED COURSES

Moving forward, I look forward to continuing to teach introductory courses in Human-Computer Interaction such as *User-Centered Design* and *Interaction Design*. In addition, I would also like to help develop or teach courses on:

### *Information Visualization*

A project-based introduction to the history and core concepts of information visualization including interactive visualization paradigms. Assignments would involve developing visualizations in a range of mediums including hand-drawn visualizations, visualizations in analysis software such as Excel or Tableau, and custom interactive visualizations with a Javascript library such as D3.

### *Introduction to Data Science*

A practice-oriented course, teaching students the basics of data mining, cleaning, reshaping, visualization, and modeling in the Python data science ecosystem. This course would include a final project where students collect and analyze data on a topic of their own choosing.

### *Human Computer Interaction Research Survey*

A reading seminar for advanced undergraduate and graduate students, introducing them to a range of research topics in HCI including novel input, social computing, and collaboration technologies. Students would also complete a small team-based HCI research project of their own choosing during the quarter. This course not only introduces students to the diversity of HCI research but also principles of research design.

[1] Zhang H, Easterday MW, Gerber EM, Rees Lewis D, Maliakal L. Agile research studios: Orchestrating communities of practice to advance research training. In Proceedings of the 2017 ACM Conference on Computer Supported Cooperative Work and Social Computing 2017 Feb 25 (pp. 220-232). ACM.