A Grassroots Approach to Sharing HCI Research with Undergraduates

Soorya Sankaran, University of California Santa Cruz, USA
Kathryn E. Ringland, University of California Santa Cruz, USA

Introduction

Traditional research dissemination methods, such as academic publishing, primarily target professionals, faculty, and graduate students. Unfortunately, these methods often fail to effectively engage the undergraduate population, leaving them disconnected from the world of research and hindering their deeper exploration of specific fields of study. As a result, undergraduates often find themselves limited to reading textbooks, attending lectures, and completing assessments, which can dampen their enthusiasm for delving into subjects in depth.

A crucial aspect of the undergraduate experience revolves around group participation. College students attend not only to acquire disciplinary knowledge but also to connect, engage, and gain insights from their peers. Whether formal or informal, information exchanged within peer groups significantly influences their professional and academic interests, surpassing what a typical classroom setting can offer.

To address this gap, academic student organizations can be powerful platforms for sharing research experiences and fostering undergraduate interest, especially in human computer interaction. Extending beyond traditional educational structures, these organizations enable undergraduates to explore and engage with research meaningfully.
Through collaborative efforts with fellow undergraduates in student organizations, we have explored a range of meeting formats and guest speakers, refining our approaches to capture students' interest and foster their engagement in research. These experiences have provided invaluable insights into effectively connecting with undergraduates, tailoring methods of sharing information, and creating opportunities for their research exploration.

In this paper, I delve into the challenges of engaging undergraduates with HCI research and some benefits and strategies associated with academic student organizations. Furthermore, I propose simple ways in which established members of the HCI community can contribute to these initiatives. By shedding light on the transformative potential of grassroots undergraduate communities, we aim to inspire and empower a new generation of passionate and well-informed HCI researchers and practitioners poised to make significant contributions to the field.

Challenges of Undergraduate Engagement in HCI Research

Undergraduates can initially encounter challenges in HCI research, specifically disciplinary siloing and a perceived disconnect between research and application.

Disciplinary siloing presents a significant hurdle as undergraduates focus on major classes within their department, with limited exposure to other disciplines. Their interaction primarily occurs within academic organizations that align with their interests, often involving peers from the same major. However, HCI is an interdisciplinary field requiring collaboration between individuals with diverse backgrounds and skill sets. The lack of exposure to other disciplines makes introducing students to HCI research challenging, which heavily relies on combining skills from multiple departments.

Another challenge is the perceived disconnect between research and application. Undergraduates may view research as solely academic, without direct impact or practical application. They may need to know the various research methods and types available within HCI. However, HCI research allows undergraduates to engage directly with people and apply novel ideas to develop and evaluate new forms of interaction. This practical and hands-on aspect of HCI research can particularly appeal to undergraduates who prefer experiential learning or a "learn by doing" approach, which may not be emphasized or easily achieved in a traditional classroom setting.

In summary, undergraduates face challenges in HCI research due to disciplinary siloing and a perceived disconnect between research and application. Overcoming these challenges involves fostering interdisciplinary collaboration and emphasizing the practical implications of HCI research. By providing diverse learning opportunities and highlighting the real-world impact of HCI, we can encourage undergraduates to actively engage in this interdisciplinary field and gain valuable experiences that bridge theory and practice.

Undergraduate Organization Strategies for HCI Research

To engage undergraduates in HCI research, we discovered effective strategies through trial and error. Structuring meetings with short, casual/personal presentations and engaging group activities led by the presenters proved consistently successful.

Presenters who encouraged casual interaction and conversation were well-received during presentations. Particularly, those who shared their connection to the research topic were more compelling than those who immediately delved into their research. In interdisciplinary fields like HCI or cognitive science, undergraduates especially appreciated presenters who shared their life experiences and academic/career path.

For the group activities, we identified multiple forms that maximized the unique advantages of a student organization compared to a traditional lecture. One effective approach involved providing experiences with novel interaction technology. For instance, we organized virtual reality interaction nights where members could enjoy exploring VR headsets together. This simple yet exciting activity allowed undergraduates to experience new technology in a group setting, often marking their first encounter with virtual reality.

Design-based group games and activities also proved successful in promoting interaction and enjoyment. One popular game we implemented was an activity called "Shark Tank," inspired by the reality business show. Members were given a broad HCI-related prompt, such as wearable technology, to ideate in teams. They pitched their ideas, engaged in lighthearted critiques of other proposals, and collectively voted on the best concept. This activity fostered interaction among participants and quickly piqued their interest in new design concepts.

Some of the challenges of undergraduate engagement in HCI research, including disciplinary siloing and a perceived disconnect between research and application, can be effectively addressed through strategic approaches. By structuring meetings with a combination of short, casual/personal presentations and engaging group activities, undergraduates can be consistently engaged. Presenters encouraging interaction and sharing personal connections to their research topics are more compelling to students. Providing experiences with novel interaction technology and incorporating design-based group games enhance engagement and promote interaction among undergraduates. These strategies create an inclusive and

stimulating environment that bridges the gap between theory and practice, inspiring undergraduates to participate in HCI research actively and fostering their passion for the field.

Supporting HCI Education through Undergraduate Organizations: Involvement of Established HCI Community Members

The involvement of established HCI community members in undergraduate organizations greatly enhances the support for HCI education. These experienced professionals can contribute in various ways, providing valuable insights and guidance to the students.

One way established HCI community members can contribute is by offering presentations on their research. These presentations provide valuable exposure to cutting-edge research topics, methodologies, and advancements within the field of HCI. In particular, presenters can focus on sharing design methodologies, offering undergraduates insights into different approaches and strategies employed in HCI research.

In addition to presentations, organizing lab or workplace tours is another valuable opportunity facilitated by established HCI community members. During these tours, researchers can set up demonstrations of their work, allowing undergraduates to observe and experience first-hand how research is practiced in various areas within HCI. By interacting with researchers in their work environment, students gain a deeper understanding of the research process, methodologies, and collaboration involved in HCI. This first-hand exposure helps bridge the gap between theoretical knowledge and practical application.

Established HCI community members can also provide undergraduates with valuable career and path information. Sharing their career journeys and experiences, they can offer insights into different career opportunities within HCI. They can discuss various paths in academia, industry, or other HCI-related fields, guiding graduate programs, internships, job prospects, and the skills and qualifications needed for success. This career guidance helps students make informed decisions and prepares them for future endeavors in HCI.

In summary, the involvement of established HCI community members in undergraduate organizations significantly benefits HCI education. Their presentations, lab or workplace tours, and guidance enrich the learning experience, inspire students, and provide valuable insights into research methodologies and career opportunities. By sharing their expertise and experiences, these professionals contribute to the growth and development of undergraduates in their communities.

Closing

In this workshop, my goal is to connect with researchers to learn new strategies that can expand the dissemination of HCI research among undergraduates and amplify its impact. As an undergraduate student, I am deeply committed to sharing HCI research with fellow students. Student organizations have proven to be effective platforms for implementing and communicating strategies among undergraduates, including myself. Notably, the strategies discussed in this paper were successfully implemented within our university's Cognitive Science Student Association, which is comprised of a dedicated group of HCI enthusiasts.

Throughout my academic journey, I have been fortunate to receive valuable support from faculty members, graduate students, and other inquisitive undergraduates at my university. Their dedication to going beyond the requirements of my undergraduate cognitive science

degree has significantly deepened my understanding of HCI, design, and research. Consequently, I am driven to pay it forward by developing systems and strategies that empower a broader audience to explore HCI alongside me.

Author Bios

Soorya Sankaran is a third-year undergraduate in cognitive science at University of California Santa Cruz. Presently he is conducting research in human computer interaction, cognitive and computational neuroscience, assistive technology, and virtual reality.

Kathryn Ringland, PhD, is an Assistant Professor at the University of California Santa Cruz. Her areas of interest include human computer interaction, games studies, and critical disability studies.