Panel: What and How to Teach Accessibility

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ABSTRACT

This panel will provide practical advice on what and how to teach accessibility in a variety of settings. In this context, teaching accessibility means teaching about computer technologies that people with various disabilities can use and be productive with. At the undergraduate level it could mean teaching about how to design and build accessible web sites and applications. At the graduate level it could be teaching about building applications that can help people with disabilities with specific tasks. An entire course could focus on accessibility or it could be just part of an existing course. It is also important to learn about the diversity of consumers of technologies: what their abilities are and what access infrastructures they use every day. All the panelists have extensive experience in teaching accessibility. They will provide the audience of the panel deep insights into what they might do to teach accessibility in their own courses.

Categories and Subject Descriptors

- Social and professional topics → Computing education;
- Social and professional topics → People with disabilities

Keywords

Accessibility, Disability, Teaching Accessibility

1. SUMMARY

According to the World Health Organization there are about one billion people in the world with a significant disability. This is about 15% of the world's population, all of who can benefit from access to computers, smartphones, tablets, and public computers such as ATMs and airline kiosks. Much of we teach in computer science is related to human facing applications that should be accessible to these users. As such, accessibility should be a central topic in courses in human-computer interaction (HCI), in web design and development, software engineering, robotics, data visualization, computer vision, and natural language processing.

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SIGCSE '20, March 11–14, 2020, Portland, OR, USA

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ACM ISBN 978-1-4503-6793-6/20/03.

<https://doi.org/10.1145/3328778.3372514>

Indeed, learning about the wide variety of computer users and their access needs could be in introductory programming and design courses.

A comprehensive survey of computer science and information school faculty, reported at SIGCSE '18 [2], addressed three research questions, one of which was: What barriers do faculty see to teaching accessibility? Of the 1,857 from 352 institutions who responded to the survey only 375 (15%) responded that they already teach about accessibility. Of those who do not teach accessibility, 53% agree or strongly agree that accessibility should be taught. Two main barriers noted by those who do not teach accessibility are that the topic is not part of the curriculum and that they don't know enough to teach it. This panel will help address these two barriers.

2. PANEL STRUCTURE

The panel will consist of a moderator, Richard E. Ladner, and five panelists Anat Caspi, Leah Findlater, Paula Gabbert, Amy Ko, and Daniel Krutz, all of whom have extensive experience in teaching accessibility. They all present different approaches to teaching accessibility so that audience members are more likely to find one that suits their desires to include accessibility in their courses.

The plan for the panel is that the moderator will provide a brief background of the issues in including accessibility in courses (5 minutes). After that, each of the five panelists will present their approach to teaching accessibility (50 minutes, 10 minutes each). There will be time for one or two questions during the transition between speakers. The panel will conclude with 20 minutes of open questions from the audience.

3. POSITION STATEMENTS

Richard E. Ladner, Moderator, is a Professor Emeritus in the Paul G. Allen School of Computer Science and Engineering at the University of Washington. For the last fifteen years he has been teaching accessibility related topics in individual lectures in various courses and in a capstone design course. In addition to teaching accessibility, he is the Principle Investigator for the NSF-funded alliance AccessComputing that has the goal of increasing the participation and success of students with disabilities in computing fields. An active project in AccessComputing is the promotion of the teaching about disability and accessibility in computer science and information school courses [1].

Anat Caspi, Panelist, is a Principal Scientist and the Director of the Taskar center for Accessible Technology (TCAT) in the Paul

G. Allen School of Computer Science and Engineering at the University of Washington. TCAT develops, translates and deploys open source universally accessible technologies, with a focus on benefiting populations with motor limitations or speech impairments. She teaches the Accessibility Capstone course which is a two quarter course where students experience the unique challenge of creating novel, practical technology solutions to address the needs of community members with disabilities who are the needs experts and co-designers on student teams. She has taught this course since 2014. She will talk about teaching accessibility in the context of an undergraduate capstone design course and the benefits of engaging community members as stakeholders for the course

Leah Findlater, Panelist, is an Assistant Professor in the Department of Human Centered Design and Engineering (HCDE) at the University of Washington. She is the Director of the Inclusive Design Lab that focuses on research to ensure that the next generation of computing technologies are designed to meet the needs of the broadest range of users. She has a new course titled “Accessibility and Inclusive Design” for Master’s students in HCDE, and taught a similar course at the University of Maryland in 2016 and 2017. The course is a one quarter introduction to designing, prototyping, and evaluating inclusive user interfaces that meet the needs of a diverse set of users—such as older adults, users with visual, cognitive or motor disabilities, and users who are deaf or hard of hearing. She will talk about teaching accessibility in the context of a Master’s level design course.

Paula Gabbert, Panelist, is a Professor in the Department of Computer Science at Furman University. She teaches a CS0 course that highlights accessibility in each of the core topics covered: data storage, architecture, operating systems, networks and the web, algorithms and programming, and software development. For example, in architecture she highlights hardware to accommodate different disabilities such as eye trackers, Braille keyboard, and refreshable Braille displays. In the data storage unit, the course explores the various types of data representations and how they can be translated from one to the other using various technologies including speech to text, OCR, etc.. She has taught this course twice since spring 2018. She will talk about teaching accessibility in the context of an introductory computer science course for undergraduates.

Amy J. Ko, Panelist, is an Associate Professor and Informatics Chair in the Information School at the University of Washington. Her research spans computing education, HCI, and software engineering. She is also a Co-Principal Investigator for AccessComputing. She created CS for All Washington, a statewide advocacy coalition championing K-12 computing education in Washington State. She was instrumental in bringing accessibility into the UW iSchool’s Intellectual Foundations of Information course, the first course that undergraduates take in the Informatics major. Students learn that information is something that needs to be accessed and perceived, and that interfaces can pose insurmountable barriers to access and perception. Topics covered include the definition of accessibility, history of accessibility, access technologies, and universal design. Accessibility has been included in this course since 2012. She will also talk about the process of including accessibility topics in an introductory design course.

Daniel Krutz, Panelist, is an Assistant Professor in the Department of Software Engineering at the Rochester Institute of Technology. He specializes in self adaptive systems, decision support systems and computing education. He is the Principal Investigator of an NSF-funded project to create five Accessibility Learning Labs that will soon be available to educators. These labs will be designed to raise awareness of accessibility challenges faced by users with disabilities and to teach students how to create accessible software. He will talk about the design of the Accessibility Learning Labs and how they can be used in various courses to teach accessibility.

4. ACKNOWLEDGEMENTS

This panel is supported by National Science Foundation Grants, Numbers 1539179 and 1825023.

5. REFERENCES

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