

AccessViz Workshop 2025 Outcome Report

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ABSTRACT

The ubiquity of data visualization across various domains—from data science and machine learning to business intelligence, medical science, and education—demonstrates its critical role in conveying complex information. However, it is now well-known that visualizations may create inequitable access to information for people with different disabilities (e.g., vision, motor, or cognitive disabilities). In response, the accessibility and visualization fields have sought to increase the accessibility of data visualizations for different populations. Examples of research in this area include interviews and observational studies with users with disabilities to understand accessibility issues with visualization, proposing theoretical frameworks, and designing technical solutions such as generating alt text, sonification, or physical artifacts. Despite these efforts, many visualization interfaces and tools remain inaccessible to users with various forms of disabilities. Building on the growing interest and open challenges at this intersection, the **Accessible Data Visualization (AccessViz)** workshop aims to gather researchers, practitioners, and representatives from disability community at a common platform where we can formulate a community, share innovative discoveries, and envision the future of accessible data visualization research. This technical report summarizes the structure and outcome of the second iteration of the workshop.

Index Terms: Human-centered computing—Visualization—Visualization application domains.

1 INTRODUCTION

Accessible visualization has become a significant focus in the visualization and human–computer interaction communities over the past decade, with increased attention to multimodal interaction, non-visual data representations, and inclusive design. Researchers at venues such as IEEE VIS, CHI, and ASSETS have examined how visualization systems can better address diverse sensory, cognitive, and experiential needs. The AccessViz workshop series builds on this progress by offering a dedicated space for researchers, practitioners, and disability community members to discuss challenges, share experiences, and guide the future of accessibility in visualization.

Building on this broader momentum, the AccessViz workshop at IEEE VIS 2025 builds on the 2024 workshop outcome, which synthesized community challenges into a call to action for accessible visualization research. This year’s workshop shifted focus toward translating those shared insights into practical strategies that can

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Table 1: Workshop Schedule

Time	Activity
2:00 - 2:05 PM	Welcome and Opening Remarks
2:05 - 2:50 PM	Keynote Speaker: Kim Marriott
2:50 - 3:30 PM	Paper talks
3:30 - 4:00 PM	Coffee break
4:00 - 4:20 PM	Paper talks (continued)
4:20 - 4:30 PM	State-of-the-art Overview
4:30 - 5:20 PM	Group Activity
5:20 - 5:30 PM	Closing Remarks

influence accessibility practices within the VIS community. Rather than identifying new problem spaces, participants reflected on how existing accessibility research can move toward sustainable impact, equitable participation, and trustworthy technological practices.

The second AccessViz workshop took place in Vienna, Austria, during the IEEE VIS 2025 conference. Facilitated group discussions addressed topics such as education and literacy, research–practice translation, representation and participation, and the role of AI in accessibility pipelines. This report synthesizes these discussions into key insight areas and concrete recommendations intended to support ongoing accessibility efforts within the VIS community.

To support this transition from reflection to implementation, the workshop was organized around three primary goals:

Goal #1: Expand and sustain a platform for researchers, practitioners, and disability community members to share ideas and future directions.

Goal #2: Support and inspire new researchers in accessible data visualization by providing clear entry points into the field.

Goal #3: Translate community insights into actionable contributions that influence accessibility practices within the VIS community.

The remainder of this report describes the workshop structure and activities, highlights key insights from the discussions, and presents recommendations for the VIS community.

2 WORKSHOP SCHEDULE AND ACTIVITIES

The AccessViz workshop was a half-day workshop held on November 3rd, 2025, from 2:00 PM to 5:30 PM (local time). The program included invited talks, peer-reviewed paper presentations, and facilitated group discussions to encourage community exchange and translate insights from previous workshops into actionable directions for the IEEE VIS community. Table 1 presents the detailed schedule, and Table 2 lists the accepted papers presented.

2.1 Keynote and Paper Presentations

The workshop opened with remarks from the organizers, followed by a keynote from Kim Marriott (<https://sensilab.monash.edu/>)

Table 2: Papers accepted and presented in the workshop.

Paper	Authors
Using Real Names of Disabled Participant-Contributors to Practice Citational Justice in Accessibility	Jonathan Zong
Exploring Data Visualisation Barriers and Needs of Autistic Adults	Mona Alzahrani, Alexandra L. Uitdenbogerd, Beth Johnson, Benjamin Tag, Michael Wybrow
Calling for Research on Reference Methods for Data Sonification	Hyeok Kim
Bridging Chart Extraction and Accessibility in Data Visualization	Brianna Wimer
Playing Telephone with Generative Models: “Verification Disability,” “Compelled Reliance,” and Accessibility in Data Visualization	Frank Elavsky, Cindy Xiong Bearfield
InTouch: Rethinking Annotation and Note-taking in Tactile Graphics and Visualizations	Shuqi He, Lingyun Yu

people/kim-marriott/). In his talk, *What I wished I knew then*, Kim shared lessons from over 15 years of working with blind and low-vision communities, highlighting how early missteps led to a focus on long-term, partnership-driven collaboration. His reflections established the workshop’s context by emphasizing sustained engagement, community partnerships, and the evolving responsibilities of accessibility researchers.

The keynote was followed by six paper presentations covering topics including citational justice, autistic adults’ experiences with visualization, data sonification methods, chart extraction and accessibility, AI-mediated verification, and tactile annotation practices. These talks provided concrete examples that informed later discussions.

2.2 Breakout Discussions and Synthesis

After the paper sessions, organizers presented a brief state-of-the-art overview to situate the discussions within broader accessibility research trends. Participants then joined structured breakout discussions to build on themes from the accepted papers and the previous year’s call to action. These discussions highlighted shared tensions, experiences, and opportunities within the community, rather than seeking consensus.

Organizers synthesized notes from the breakout groups to identify recurring themes and practical implications for the VIS community. These findings form the basis of the workshop outcomes presented in the next section.

3 WORKSHOP OUTCOMES

The following insights and recommendations align with the workshop’s objectives to foster community exchange, support new researchers, and translate discussions into actionable practices within the VIS community.

3.1 Key Insight Areas

Workshop participants engaged in facilitated small-group discussions that explored four primary topics:

3.1.1 Education, Literacy, and Co-Creation

Educational resources remain predominantly designed for sighted learners, frequently relying on visual artifacts that presuppose visual fluency. While accessibility tools and checkers may encourage improved practices, they do not ensure meaningful access. Participants emphasized that accessibility should be established as a foundational design principle rather than addressed as a remediation step. Furthermore, there is a need for more effective tools that support meaningful access. Multimodal interaction introduces additional complexity. While interactivity can enhance engagement for some learners, it may overwhelm others, underscoring the need for configurable experiences that accommodate diverse cognitive and sensory

preferences. Co-creation with disabled communities, together with proactive educator engagement, emerged as a core strategy.

Implication for VIS Practice: These discussions suggest that accessibility should be treated as a starting point for visualization education rather than an afterthought, with participatory design and multimodal interaction informing how learning materials and tools are developed across the VIS community.

3.1.2 Research–Practice Translation

Participants identified persistent gaps between accessible visualization research and its real-world adoption. Many promising tools do not progress beyond the prototype stage due to limited incentives for maintenance, documentation, or long-term deployment. Researchers frequently encounter tensions between producing technically novel contributions and developing sustainable solutions for practitioners.

Early-career researchers may struggle to invest in longitudinal work due to the transient nature of academic positions, and accessibility pipelines are frequently more complex than initially anticipated. Adoption was characterized as a socio-technical process that requires partnerships, community trust, and sustained engagement beyond individual research cycles.

Implication for VIS Practice: Participants highlighted the need for VIS evaluation and publication cultures to better recognize sustained collaboration, maintenance, and deployment work, positioning accessibility research as an ongoing socio-technical process rather than a one-time technical contribution.

3.1.3 Power, Participation, and Representation

Discussions highlighted the risk of limiting accessibility work to familiar personas, particularly blind and low-vision users, while overlooking other communities such as individuals with cognitive disabilities or dementia. Participants emphasized that the concept of “community” extends beyond individual users to encompass caregivers, families, and networks of support.

Bias in participant recruitment and representation remains a concern, as individuals who are more technically literate or well-resourced are often overrepresented in studies. Participants also noted that visualization practices carry social and identity assumptions, which influence who feels represented or excluded.

Implication for VIS Practice: The workshop emphasized expanding participation models within VIS to reflect diverse disability communities and networks of care, encouraging researchers to reconsider assumptions about who visualization is designed for and whose perspectives shape accessibility research.

3.1.4 Trust and AI in Accessibility Pipelines

AI systems increasingly mediate access to visual information, expediting the creation of alt text and descriptions while raising new questions regarding trust, accountability, and agency. Participants observed that AI does not eliminate power imbalances but rather

shifts them. Users must continue to rely on external generators, whether human or automated.

Trust may be strengthened through verification mechanisms, transparent reasoning processes, and interfaces that enable users to inspect or challenge generated outputs. Participants also emphasized the importance of notifying users when descriptions are automatically generated and of offering alternative verification pathways.

Implication for VIS Practice: Discussions underscored the importance of designing AI-mediated accessibility tools that support verification, transparency, and user agency, prompting VIS researchers to consider trust and accountability as core design concerns alongside technical performance.

3.2 Concrete Recommendations for the VIS Community

1. **Center Community Participation and Lived Impact:** Integrate co-creation and sustained collaboration with disabled communities across all stages of research. Evaluate work based on real-world usability, community benefit, and long-term impact, and maintain feedback loops by returning outcomes to participants.
2. **Design for Diverse Access and Representation:** Develop configurable and flexible interactions that support diverse sensory and cognitive needs. Move beyond default accessibility personas to include diverse disability experiences, intersecting identities, and networks of care.
3. **Support Sustainable and Deployable Systems:** Recognize maintenance, documentation, and long-term deployment as meaningful scholarly contributions. Promote open and sustainable tooling that remains usable and adaptable beyond initial publication, and support the transition from research prototypes to real-world use.
4. **Address Structural Barriers to Participation:** Consider structural factors such as compliance requirements, literacy differences, and early-life access as core constraints shaping participation in visualization research and use.
5. **Build Trustworthy and Transparent AI Systems:** Design AI-supported accessibility tools that provide verifiable outputs, transparent reasoning, and mechanisms for users to inspect or challenge generated content.

This year's workshop represents a transition from identifying challenges to operationalizing accessibility practices within the VIS community. Future iterations may focus on evaluating the influence of these recommendations on research culture, tooling, and community participation.

4 2025 ORGANIZING COMMITTEE

Brianna Wimer is a PhD candidate in Computer Science and Engineering at the University of Notre Dame. Her research focuses on developing systems that support educators in creating accessible visualizations and diagrams for students with disabilities.

Naimul Hoque is an Assistant Professor of Computer Science at the University of Iowa. He completed his PhD in Information Studies from the University of Maryland, College Park (UMD). His research focuses on designing systems and tools for promoting creativity, sense-making, and learning by combining AI and interactive visualization.

Pramod Chundury holds a PhD from the College of Information (iSchool) at the University of Maryland. His research focuses on equitable access to information and data, aiming to support more inclusive data-driven decision making. He investigates multimodal data experiences, including visualization, sonification, physicalization, and conversational interfaces, to enhance human cognition. His work also explores collaboration between individuals with and

without disabilities, using mixed methods to design and evaluate assistive technologies for data analysis.

Frank Elavsky is an incoming Assistant Professor of Data Science at Cal Poly (Fall '26) and presently a PhD candidate at the Human-Computer Interaction Institute at Carnegie Mellon University. His research is at the intersection of accessibility and data interaction, designing and engineering tools and resources that help practitioners craft more accessible data systems for and alongside people with disabilities. Frank's industry involvement includes work with Apple, Microsoft, Visa and others, spanning research and development, prototyping, and design systems engineering with a focus on visualization accessibility.

Dominik Moritz is on the faculty at Carnegie Mellon University where he co-directs the Data Interaction Group at the Human-Computer Interaction Institute. His group's research develops interactive systems that empower everyone to effectively analyze and communicate data. Dominik also manages the visualization team in Apple's machine learning organization. His systems (Vega-Lite, Falcon, Draco, Voyager, and others) have won awards at academic venues (e.g. IEEE VIS and CHI), are widely used in industry, and by the Python and JavaScript data science communities. Dominik got his PhD from the Paul G. Allen School at the University of Washington, where he was advised by Jeff Heer and Bill Howe.

Keke Wu is an Assistant Professor at the University of Maryland, College Park, and an Associate Director of the Maryland Initiative for Digital Accessibility. Her research bridges data and lived experience through visualization, developing inclusive and cognitively accessible approaches that help people understand, reflect on, and connect with data. She helped establish cognitive accessibility as an emerging frontier in visualization and continues to explore ways that make data more accessible, expressive, and meaningful.

Danielle Albers Szafir is an Assistant Professor of Computer Science at the University of North Carolina at Chapel Hill. Her research focuses on modeling and applying knowledge of human cognition to support visualization. She has worked on numerous projects pertaining to visualization accessibility since 2017, including developments in cognitively-accessible visualization and tactile graphics. **Lucas Gil Nadolskis**, is a PhD student in Dynamical Neuroscience at UC Santa Barbara as a member of the Bionic Vision Lab. His work spans autonomous navigation, computer vision, brain-computer interfaces, and enhancing accessibility in data visualization. Lucas's research focuses on developing innovative cortical implants for the blind—a cause close to his heart, as he has been blind since age five.

Stacy Hsueh is an Assistant Professor in the Computer Science Department at the University of Nottingham. Her work explores ways to support more embodied and multisensory modes of data interaction. She has drawn on disability studies to improve our understanding of what it means to center agency in design and has applied those insights to chart out a wider range of accessible visualization designs.