JooYoung **Seo**

Ph.D.

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I am a learning scientist, data-science/software developer, and internationally certified accessibility professional.

Education

The Pennsylvania State University	*University Park, PA*
Ph.D. in Learning, Design, and Technology	*2021*

- Dissertation Title: "Discovering Informal Learning Cultures of Blind Individuals Pursuing STEM Disciplines: A Computational Ethnography Using Public Listserv Archives."
- Committee members: Drs. Gabriela T. Richard (adviser; dissertation chair), Roy B. Clariana, ChanMin Kim, and Mary Beth Rosson.

The Pennsylvania State University	*University Park, PA*
M.Ed. in Learning, Design, and Technology	*2016*
Sungkyunkwan University	*Seoul, South Korea*
Double B.A. in Education, English Literature	*2014*

Professional Appointment

School of Information Sciences	*University of Illinois at Urbana-Champaign*
Assistant Professor	*Sep. 2021 - Present*
Department of Computer Science	*University of Illinois at Urbana-Champaign*
Faculty Affiliate	*Apr. 2024 - Present*
Illinois Informatics Institute	*University of Illinois at Urbana-Champaign*
Faculty Affiliate	*Sep. 2021 - Present*
National Center for Supercomputing Applications	*University of Illinois at Urbana-Champaign*
Faculty Affiliate	*Dec. 2021 - Present*
Beckman Institute for Advanced Science and Technology	*University of Illinois at Urbana-Champaign*
Faculty Affiliate	*Dec. 2023 - Present*
Center for Social and Behavioral Science	*University of Illinois at Urbana-Champaign*
Faculty Affiliate	*Aug. 2025 - Present*
IDEA (Inclusion, Diversity, Equity, and Access) Institute	*University of Illinois at Urbana-Champaign*
Faculty Affiliate	*Jan. 2022 - Present*
Rehabilitation Engineering Research Center (RERC) on Blindness and Low Vision	*Smith-Kettlewell Eye Research Institute*
Affiliate Scientist	*Jul. 2023 - Present*
AccessComputing	*University of Washington*
AccessComputing partner	*Feb. 2024 - Present*
RStudio	*Boston, MA*
Software Engineer Intern	*May. 2020 - Aug. 2020*

Grants

- "Collaborative Research: An AudioTactile Data System for Blind or Low Vision Faculty, Staff, Postdocs, and Graduate Students in Chemistry, Math, Computer and Information Sciences," PI (at UIUC), National Science Foundation (NSF Grant Award #2348166), Workplace Equity for Persons with Disabilities in STEM and STEM Education (nsf23593), $459,000 (for UIUC) out of $1,200,159 total, August 2024 - July 2028 (ongoing).

- "Beyond Visuals: Improving Accessibility of Data Curation and Multi-Modal Representations for People of all Abilities through Reproducible Workflows," PI, Institute of Museum and Library Services (IMLS) Laura Bush 21st Century Librarian Program, Grant #RE-254891-OLS-23, $649,921, Aug 2023 - July 2026 (early terminated on April 28 and reinstated on May 21, 2025 affected by the President's Executive Order 14238).

- "Promoting Computational Thinking Skills for Blind and Visually Impaired Teens through Accessible Library Makerspaces," PI, Institute of Museum and Library Services (IMLS) National Leadership Grants, Grant #LG-252360-OLS-22, $498,638, Aug 2022 - May 2025 (early terminated on April 8th and reinstated on May 21, 2025 affected by the President's Executive Order 14238).

- "Inclusive Data Science: Fostering Accessibility and Reproducibility with Multimodal Learning Strategies," PI, Teach Access Faculty Grants, Tier 3, $5,000, May 2023 - May 2024 (completed).

- "Improving Accessible Reproducibility for Data Science Publishing System," PI, Posit PBC (unrestricted gift), $54,327, May 2022 - Present (ongoing).

- "Co-designing an Alexa-Based Conversational mHealth System with Visually Impaired People to Promote Physical Activities," Co-PI, Center on Health, Aging, and Disability's (CHAD) Pilot Grant Program at the University of Illinois at Urbana-Champaign, $29,866, 2023-2024 (ongoing).

- "Category I: Crossing the Divide Between Today's Practice and Tomorrow's Science," Senior Personnel, National Science Foundation (NSF), Grant #2005572, $10,000,000.00, Oct 2021 - Sept 30, 2026 (.5 FTE academic year) (ongoing).

- "Insight without Sight: Enhancing Data Literacy through Multimodal Data Science Education - Smith-Kettlewell Summer Institute," Subaward PI, Rehabilitation Engineering Research Centers (RERC) Program: RERC on Blindness and Low Vision, National Institute on Disability, Independent Living, and Rehabilitation Research (NIDILRR), Grant #90REGE0018-01-00, $11,975, July 17, 2023 - August 11, 2023 (completed).

- "Data Accessibilization: Making Data Science Education Accessible for Blind Learners," PI, Wallace Foundation, Emerging Scholars Program, International Society of the Learning Sciences, $10,000, Jan 2022 - Dec 2022 (completed).

Publications

- The following notations only apply to September 2021 and after.

#: derived from the candidate's thesis.

∗: publication that has undergone stringent editorial review by peers.

+: publication that was invited and carries special prestige and recognition.

Refereed Journal Papers

13.[∗] Choi, S., Chen, Y., & **Seo, J.** (2025). Development of an Interactive R Shiny Application for Dynamic Health Disparities Research. *Nursing Administration Quarterly*. `https://doi.org/10.1097/CIN.0000000000001397`

12.[∗] Choi, G. W., & **Seo, J.** (2024). Accessibility, Usability, and Universal Design for Learning: Discussion of Three Key LX/UX Elements for Inclusive Learning Design. *TechTrends*. `https://doi.org/10.1007/s11528-024-00987-6`

11.[∗] Choi, S., **Seo, J.**, Hernandez, M., & Kitsiou, S. (2024). Conversational agents in mHealth: Use patterns, challenges, and design opportunities for individuals with visual impairments. *Journal of Technology in Behavioral Science*. `https://doi.org/10.1007/s41347-024-00409-7`

10.[∗] Lee, J. G. W., Lee, K., Lee, B., Choi, S., **Seo, J.**, & Choe, E. K. (2023). Personal Health Data Tracking by Blind and Low-Vision People: Survey Study. *Journal of Medical Internet Research*, *25*(1), e43917. `https://doi.org/10.2196/43917`

9. *Moon, J., Choi, G. W., & **Seo, J.** Y. (2023). Revisiting multimedia learning design principles in virtual reality-based learning environments for autistic individuals. *Virtual Reality*. `https://doi.org/10.1007/s10055-023-00856-2`

8. *Moon, J., Lee, D., Choi, G. W., **Seo, J.**, Do, J., & Lim, T. (2023). Learning analytics in seamless learning environments: A systematic review. *Interactive Learning Environments*, *0*(0), 1–18. `https://doi.org/10.1080/10494820.2023.2170422`

7. ***Seo, J.**, & Dogucu, M. (2023). Teaching Visual Accessibility in Introductory Data Science Classes with Multi-Modal Data Representations. *Journal of Data Science*, 1–14. `https://doi.org/10.6339/23-JDS1095`

6. ***Seo, J.**, & Choi, S. (2022). Are blind people considered a part of scientific knowledge producers?: Accessibility report on top-10 SCIE journal systems using a tripartite evaluation approach. *Journal on Technology and Persons with Disabilities*.

5. ***Seo, J.**, Moon, J., Choi, G. W., & Do, J. (2022). A Scoping Review of Three Computational Approaches to Ethnographic Research in Digital Learning Environments. *TechTrends*, *66*(1), 102–111. `https://doi.org/10.1007/s11528-021-00689-3`

4. Choi, S., & **Seo, J.** (2021). Trends in healthcare research on visual impairment and blindness: Use of bibliometrics and hierarchical cluster analysis. *Ophthalmic Epidemiology*, *28*(4), 277–284. `https://doi.org/10.1080/09286586.2020.1863993`

3. ***Seo, J.**, & Richard, G. T. (2021). SCAFFOLDing All Abilities into Makerspaces: A Design Framework for Universal, Accessible and Intersectionally Inclusive Making and Learning. *Information and Learning Sciences*, *122*(11/12), 795–815. `https://doi.org/10.1108/ILS-10-2020-0230`

2. **Seo, J.** (2019). Is the maker movement inclusive of ANYONE?: Three accessibility considerations to invite blind makers to the making world. *TechTrends*, *63*(5), 514–520. `https://doi.org/10.1007/s11528-019-00377-3`

1. **Seo, J.**, & McCurry, S. (2019). LaTeX is NOT easy: Creating accessible scientific documents with r markdown. *Journal on Technology and Persons with Disabilities*, *7*, 157–171.

Papers in Refereed Conference Proceedings

32. *Ge, K., Paul, R., Zhang, P., & **Seo, J.** (2025). Phoenix: A Novel Context-Aware Voice-Powered Math Equation Workspace and Editor. *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility*, 1–6. `https://doi.org/10.1145/3663547.3759766`

31. *Kamath, S. S., Khan, O., Choudhary, A., Meyerhoff-Liang, J., Choi, S., & **Seo, J.** (2025). PunchPulse: A Physically Demanding Virtual Reality Boxing Game Designed with, for and by Blind and Low-Vision Players. *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility*, 1–21. `https://doi.org/10.1145/3663547.3746365`

30. *Kamath, S. S., Zeidieh, A. N., & **Seo, J.** (2025). Explore, Listen, Inspect: Supporting Multimodal Interaction with 3D Surface and Point Data Visualizations. *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility*, 1–6. `https://doi.org/10.1145/3663547.3759765`

29. *Khan, O., & **Seo, J.** (2025). "Sighted People Have Their Pick Of The Litter": Unpacking The Need For Digital Mental Health (DMH) Tracking Services With And For The Blind Community. *Proceedings of the Extended Abstracts of the CHI Conference on Human Factors in Computing Systems*, 1–13. `https://doi.org/10.1145/3706599.3719817`

28. *Koh, K., **Seo, J.**, Chen, S., & Cox, E. M. (2025). Engaging with information beyond vision: Hands-on approaches to computational thinking for blind and visually impaired learners. *Information Research an International Electronic Journal*, *30*(iConf, iConf), 280–286. `https://doi.org/10.47989/ir30iConf47353`

27. *Ning, Z., Li, L., Killough, D., **Seo, J.**, Carrington, P., Tian, Y., Zhao, Y., Li, F. M., & Li, T. J.-J. (2025). AROMA: Mixed-Initiative AI Assistance for Non-Visual Cooking by Grounding Multimodal Information Between Reality and Videos. *Proceedings of the 38th Annual ACM Symposium on User Interface Software and Technology*, 1–15. `https://doi.org/10.1145/3746059.3747650`

26. *Zeidieh, A. N., & **Seo, J.** (2025). Check Now, Can You See It?: Exploring Voice and Video-Capable Language Models for Identifying and Spatially Locating Items of Interest for Blind and Low-Vision Travelers. *Proceedings of the 27th International ACM SIGACCESS Conference on Computers and Accessibility*, 1–5. `https://doi.org/10.1145/3663547.3749833`

25. *Ge, K., & **Seo, J.** (2024, October 28). StereoMath: An Accessible and Musical Equation Editor. *Proceedings of the 26th International ACM SIGACCESS Conference on Computers and Accessibility*. `https://doi.org/10.1145/3663548.3688487`

24. *Kamath, S. S., Zeidieh, A., Khan, O., Sethi, D., & **Seo, J.** (2024, October 28). Playing Without Barriers: Crafting Playful and Accessible VR Table-Tennis with and for Blind and Low-Vision Individuals. *Proceedings of the 26th*

International ACM SIGACCESS Conference on Computers and Accessibility. `https://doi.org/10.1145/366354` `8.3675660`

23.* **Seo, J.**, Kamath, S. S., Zeidieh, A., Venkatesh, S., & McCurry, S. (2024, October 28). MAIDR Meets AI: Exploring Multimodal LLM-Based Data Visualization Interpretation by and with Blind and Low-Vision Users. *Proceedings of the 26th International ACM SIGACCESS Conference on Computers and Accessibility.* `https://doi.org/10.1` `145/3663548.3675660`

22.* Zhou, K. Z., Adler, R. F., Almendral, C., Choi, S., Kletenik, D., Oro, B., & **Seo, J.** (2024, October 28). Teaching Accessibility in Different Disciplines: Topics, Approaches, Resources, Challenges. *Proceedings of the 26th International ACM SIGACCESS Conference on Computers and Accessibility.* `https://doi.org/10.1145/3663548.3688553`

21.* Chen, S., Cox, E., Koh, K., & **Seo, J.** (2024). The role of verbal descriptions in facilitating computational thinking skills for BVI learners. In R. Lindgren, T. I. Asino, E. A. Kyza, C. K. Looi, D. T. Keifert, & E. Suárez (Eds.), *Proceedings of the 18th international conference of the learning sciences - ICLS 2024* (pp. 2343–2344). International Society of the Learning Sciences. `https://doi.org/10.22318/icls2024.594746`

20.* Jung, Y. J., Chang, Y., Moon, J., **Seo, J.**, Bonnette, R., Lee, J.-Y., Ke, F., Sokolikj, Z., Koh, K., Cox, E., Chen, S., Abbas, J., Munyao, M., DiCioccio, M., & Alstad, Z. (2024). Learning environments designed for and with learners with disabilities. In R. Lindgren, T. I. Asino, E. A. Kyza, C. K. Looi, D. T. Keifert, & E. Suárez (Eds.), *Proceedings of the 18th international conference of the learning sciences - ICLS 2024* (pp. 1918–1925). International Society of the Learning Sciences. `https://doi.org/10.22318/icls2024.384050`

19.* Lee, J. G. W., Lee, B., Choi, S., **Seo, J.**, & Choe, E. K. (2024). Identify, Adapt, Persist: The Journey of Blind Individuals with Personal Health Technologies. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 8(2), 51:1–51:21. `https://doi.org/10.1145/3659585`

18.* **Seo, J.**, O'Modhrain, S., Xia, Y., Kamath, S., Lee, B., & Coughlan, J. M. (2024). Designing Born-Accessible Courses in Data Science and Visualization: Challenges and Opportunities of a Remote Curriculum Taught by Blind Instructors to Blind Students. In R. S. and A. Firat Elif E. and Laramee (Ed.), *EuroVis 2024 - education papers*. The Eurographics Association. `https://doi.org/10.2312/eved.20241053`

17.* **Seo, J.**, Xia, Y., Lee, B., Mccurry, S., & Yam, Y. J. (2024). MAIDR: Making Statistical Visualizations Accessible with Multimodal Data Representation. *Proceedings of the CHI Conference on Human Factors in Computing Systems*, 1–22. `https://doi.org/10.1145/3613904.3642730`

16.* Kaushik, S., Barbosa, N. M., Yu, Y., Sharma, T., Kilhoffer, Z., **Seo, J.**, Das, S., & Wang, Y. (2023). GuardLens: Supporting safer online browsing for people with visual impairments. *Nineteenth Symposium on Usable Privacy and Security (SOUPS 2023)*, 361–380. `https://www.usenix.org/conference/soups2023/presentation/k` `aushik`

15.* Kim, S. H., Yoon, A., & **Seo, J.** (2023). Trend of Collaboration in STEM Education in Informal Learning Institutions Based on IMLS-funded Projects. *Proceedings of the Association for Information Science and Technology*, 60(1), 625–629. `https://doi.org/10.1002/pra2.828`

14.* Park, J., **Seo, J.**, & Lee, J. Y. (2023). Exploring an Online Community of Blind Programmers by Using Topic Modeling and Network Analysis. *Proceedings of the Association for Information Science and Technology*, 60(1), 1096–1098. `https://doi.org/10.1002/pra2.956`

13.* **Seo, J.**, & Rogge, M. (2023). Coding Non-Visually in Visual Studio Code: Collaboration Towards Accessible Development Environment for Blind Programmers. *Proceedings of the 25th International ACM SIGACCESS Conference on Computers and Accessibility*, 1–9. `https://doi.org/10.1145/3597638.3614550`

12.* **Seo, J.**, Xia, Y., Yam, Y. J., & McCurry, S. (2023). MAIDR: Multimodal Access and Interactive Data Representation System for Inclusive Data Science Education. *Proceedings of the 3rd Annual Meeting of the International Society of the Learning Sciences*, 51–54.

11.* Zhang, Z. (Jerry)., Kaushik, S., **Seo, J.**, Yuan, H., Das, S., Findlater, L., Gurari, D., Stangl, A., & Wang, Y. (2023). ImageAlly: A Human-AI hybrid approach to support blind people in detecting and redacting private image content. *Nineteenth Symposium on Usable Privacy and Security (SOUPS 2023)*, 417–436. `https://www.usenix.o` `rg/conference/soups2023/presentation/zhang`

10.* Huh, M., & **Seo, J.** (2022). A duoethnographic study of a mixed-ability team in a collaborative group programming project. In A. Weinberger, W. Chen, D. Hernández-Leo, & B. Chen (Eds.), *Proceedings of the 15th international conference on computer-supported collaborative learning - CSCL 2022* (pp. 471–474). International Society of the Learning Sciences.

9.* Lee, C. Y. P., Zhang, Z., Herskovitz, J., **Seo, J.**, & Guo, A. (2022). CollabAlly: Accessible Collaboration Awareness in Document Editing. *CHI Conference on Human Factors in Computing Systems*, 1–17. `https://doi.org/10.1` `145/3491102.3517635`. *Honorable mention award.*

8.* **Seo, J.**, & Dogucu, M. (2022). Teaching visual accessibility in the introductory data science classes: Why, what,

when, and how. *The 2022 Symposium on Data Science & Statistics*.

7.* Lee, C. Y. P., Zhang, Z., Herskovitz, J., **Seo, J.**, & Guo, A. (2021). CollabAlly: Accessible collaboration awareness in document editing. *The 23rd International ACM SIGACCESS Conference on Computers and Accessibility*, 1–4. `https://doi.org/10.1145/3441852.3476562`

6. **Seo, J.**, & Richard, G. T. (2020). Coding through touch: Exploring and re-designing tactile making activities with learners with visual dis/abilities. In M. Gresalfi & I. Horn (Eds.), *Interdisciplinarity in the learning sciences, 14th international conference of the learning sciences (ICLS) 2020* (Vol. 3, pp. 1373–1380). International Society of the Learning Sciences (ISLS).

5. **Seo, J.** (2019). Discovering informal learning cultures of blind individuals pursuing STEM disciplines: A quantitative ethnography using listserv archives. *The First International Conference on Quantitative Ethnography: Doctoral Consortium*, S66–S67. *Awarded the best Doctoral Consortium Proposal Cengage fellowship*.

4. **Seo, J.** (2018). Accessibility and inclusivity in making: Engaging learners with all abilities in making activities. In *Proceedings of the 3rd learning sciences graduate student conference* (pp. 141–142). LSGSC Planning Team.

3. **Seo, J.**, & Richard, G. T. (2018). Accessibility, making and tactile robotics: Facilitating collaborative learning and computational thinking for learners with visual impairments. In J. Kay & R. Luckin (Eds.), *Rethinking learning in the digital age: Making the learning sciences count, 13th international conference of the learning sciences (ICLS) 2018* (Vol. 3, pp. 1755–1757). International Society of the Learning Sciences (ISLS).

2. Konecki, M., Lovrenčić, S., **Seo, J.**, & LaPierre, C. (2017). The role of ICT in aiding visually impaired students and professionals. *Proceedings of the 11th Multidisciplinary Academic Conference*, 148.

1. **Seo, J.**, AlQahtani, M., Ouyang, X., & Borge, M. (2017). Embracing learners with visual impairments in CSCL. In B. K. Smith, M. Borge, E. Mercier, & K. Y. Lim (Eds.), *Making a difference: Prioritizing equity and access in CSCL, 12th international conference on computer supported collaborative learning (CSCL) 2017* (Vol. 2, pp. 573–576). International Society of the Learning Sciences (ISLS).

Book Chapters

1.* **Seo, J.**, & Dogucu, M. (2024). Data science and accessibility. In A. Ko, R. Ladner, & A. Oleso (Eds.), *Teaching accessible computing*. University of Washington.

Publications in Healthcare

6. Choi, S., & **Seo, J.** (2020). An exploratory study of the research on caregiver depression: Using bibliometrics and LDA topic modeling. *Issues in Mental Health Nursing*, 1–10. `https://doi.org/10.1080/01612840.2019.1705944`

5. Choi, S., & **Seo, J.** (2019). Analysis of caregiver burden in palliative care: An integrated review. *Nursing Forum*, *54*(2), 280–290. `https://doi.org/10.1111/nuf.12328`

4. Choi, S., & **Seo, J.** (2019). Heart failure research using text mining: A systematic review. *NURSING RESEARCH*, *68*(2), E119–E120.

3. Choi, S., & **Seo, J.** (2019). Trends in self-management among adults with heart failure from 2011 to 2016 using the national health and nutrition examination surveys. *Journal of Cardiac Failure*, *25*(8), S4. `https://doi.org/10.1016/j.cardfail.2019.07.540`

2. Choi, S., **Seo, J.**, & Kitko, L. (2019). Exploring the lived experience of a family member with advanced heart failure: Using a text mining approach. *The First International Conference on Quantitative Ethnography: Poster Session*, S8–S9.

1. Choi, S., & **Seo, J.** (2018). Effects of nonpharmacological interventions for fatigue in patients with heart failure: A systematic review and meta-analysis. *Journal of Cardiac Failure*, *24*(8), S73–S74.

Conference Presentations and Invited Talks

Seo, J. (2024, March). *Unseen Insights: Empowering Autonomous Data Science by, with, and for Blind People*. Invited talk at the UC Irvine Donald Bren School of Information & Computer Sciences, Irvine, CA.

Seo, J. (2023, November). *Insight Over Eyesight: My Journey as a Blind Data Scientist*. Invited talk at the Chicago Lighthouse Career Fair, Chicago, IL (virtual).

Seo, J. (2023, November). *Beyond Sight: Envisioning Data Science Through Multimodal Access*. Invited as a keynote speaker at the 2023 UIUC iSchool's Research Showcase, Champaign, IL.

Seo, J. (2023, November). *Understanding Multi-Modality of Blind People Towards Inclusive STEM Learning*. Invited talk at the UIUC CI590 DELTA Seminar, Champaign, IL.

Seo, J. (2023, July). *Screen Reader User Experience Deep Dive*. Invited talk at the Microsoft Visual Studio Code Team, virtual.

Seo, J. (2023, June). *Perceiving Beyond Vision: My Journey Through Dreamscapes, Numerical Cognition, and a Blind Critique of Inclusive Data Visualization*. Invited talk at the Dagstuhl Inclusive Data Visualization Workshop, Dagstuhl, Germany.

Seo, J. (2023, May). *Enhancing Accessibility in Programming and Fostering Inclusive Data Science via Multimodal Strategies*. Invited talk at the Campus Research Computing Consortium, virtual.

Invited panel (2023, May): *Human Computer Relationships **Work?**: Embodiment, Inclusive Design, Accessibility, and Emerging Technologies for Learning*, hosted by PhET Interactive Simulations at University of Colorado Boulder.

Invited demo by Microsoft (2023, April): *VSCode Accessibility*. VS Code Day 2023: `https://m.youtube.com/watch?v=X3qUfOB3x8Q`

Invited panel (2022, December): *Integrating Accessibility into a Computing Career*, hosted by Associate Professor Stacy Branham at Informatics of the University of California, Irvine. (virtual).

Seo, J. (2022, November). *Accessible Library Makerspaces*. Invited talk at the UIUC iSchool IS571: Accessibility in Library Resources, Champaign, IL (virtual).

Seo, J. (2022, September). *Digital Accessibility*. Invited panel at the INFOcon 2022, virtual.

Seo, J. (2022, April). *Accessible Data Visualization in a Reproducible Way*. Invited talk at Champaign-Urbana Data Science User Group, Champaign, IL (virtual).

Seo, J. (2022, March). *Understanding Multi-Modality of Blind People Towards Inclusive STEM Learning*. Invited talk at the UIUC iSchool Proseminar, Champaign, IL (virtual).

Seo, J. (2022, March). *Universal Design = Usability * Accessibility (With Practical Examples Beyond Conceptual Frameworks)*. Invited talk at INTE 535 Analysis, Implementation, and Evaluation of Assistive Technology. Instructional Technology program of the University of Alabama, Tuscaloosa, AL (virtual).

Seo, J. (2022, March). *Your Condition is Not Your Conclusion*. Invited talk at HTM4311: Hotel Professional Development at the Hong Kong Polytechnic University (virtual).

Seo, J. (2021, November). *SCAFFOLDing All Abilities into Makerspaces*. Invited talk at the UIUC iSchool IS582: Make, Design, & Learn in Libraries, Champaign, IL (virtual).

Seo, J. (2021, October). *Non-Visual Strategies for Making Statistical-Computing Accessible*. Lightening talk at the National Center for Supercomputing Applications, Champaign, IL.

Seo, J. (2021, September). *Accessibility of Science Beyond Content Accessibility*. Talk presented at the Argonne National Laboratory (Maths and Computer Science Division): `https://www.anl.gov/event/accessibility-of-science-beyond-content-accessibility`.

Invited panel (2021, August). DO-IT Neuroscience for Neurodiverse Learners Faculty panel at the University of Washington, virtual.

Seo, J. (2021, June). *How to Learn to Code*. Invited Talk presented at the Nature, Webcast: `https://doi.org/10.1038/d41586-021-01638-z`.

Seo, J., & Richard, G. T. (2021, February). *Uncovering latent topics of blind people in computer science: structural topic modeling for an email corpus*. Poster presented at the 2nd International Conference on Quantitative Ethnography (ICQE), Malibu, CA.

Donegan, S. R., Porter, C., Fogel, A., **Seo, J.**, Choi, S., & Eagan, B. (2021, February). *U.S. media coverage during COVID-19: an epistemic network analysis of bias, topic, and trajectory*. Poster presented at the 2nd International Conference on Quantitative Ethnography (ICQE), Malibu, CA.

Seo, J. (2021, January). *Accessible data science beyond visual models*. Talk presented at the rstudio::global(2021), Virtual: `https://global.rstudio.com/student/page/40617`.

Seo, J. (2020, September). *Discovering knowledge sharing patterns of blind people pursuing STEM disciplines: data science and computational linguistics on large-scale email corpora*. Poster presented at the Doctoral Consortium of

the annual meeting of the ACM Richard Tapia Celebration of Diversity in Computing, virtual. *Awarded the Qualcomm scholarship*.

Seo, J., & Richard, G. T. (2020, April). *Maker inclusivity = maker accessibility: further interrogations for diverse participation*. Poster presented at the annual meeting of the American Educational Research Association (AERA), Virtual.

Seo, J., & Richard, G. T. (2018, April). *Furthering inclusivity in making: a framework for accessible design of makerspaces for learners with disabilities*. Poster presented at the annual meeting of the American Educational Research Association (AERA), New York City, NY.

Bunag, T., Aniela, L., Nielsen, M. C., & **Seo, J.** (2017, November). *The rapidly changing world of accessible online learning*. Presented at the Panel Discussion: DDL - Accessible Online Learning In Concurrent Presentation of the Association for Educational Communications and Technology (AECT), Jacsonville, FL.

Seo, J. (2017, September). *Tactile access to visualized statistical data using R*. Poster presented at the annual meeting of the ACM Richard Tapia Celebration of Diversity in Computing, Atlanta, GA.

Liao, J., Patcyk, M., **Seo, J.**, & Hooper, S. (2016, October). *Using hierarchical linear modeling to measure growth rate in a gamified CBM environment*. Paper presented at the annual meeting of the Northeastern Educational Research Association (NERA), Trumbull, CT.

Seo, J. (2016, March). *Engaging blind learners in statistics study using R*. Presented at the annual meeting of the Teaching and Learning with Technology (TLT) Symposium, University Park, PA.

Kim, K., **Seo, J.**, & Clariana, R. B. (2016, March). *Automatic knowledge structure measure in online courses*. Presented at the annual meeting of the Teaching and Learning with Technology (TLT) Symposium, University Park, PA.

Seo, J. (2015, November). *Assistive technologies for equal access in general education*. Presented at the annual meeting of the Association for Educational Communications and Technology (AECT), Indianapolis, IN.

Seo, J., & Park, E. (2015, October). *The more accessible, the more potential: simple tips for online accessibility*. Presented at the Technology and Learning Conference, Blue Bell, PA.

Media Coverage

3. McCallen, B. (2023, November 3). *Data visualization for the blind*. `https://speakingoutfortheblind.weebly.com/list-of-episodes-and-show-news/for-more-information-episode-329-data-visualization-tool-for-the-blind`

2. Heckel, J. (2023, September 29). *Information sciences professor developing tool to make data visualizations accessible to blind researchers, students*. News Bureau University of Illinois Urbana-Champaign. `https://news.illinois.edu/view/6367/107909242`

1. Katsnelson, A. (2023). These tools help visually impaired scientists read data and journals. *Nature*, *615*(7951, 7951), 362–363. `https://doi.org/10.1038/d41586-023-00645-6`

Software Developments and Publications

Data Science Packages in Comprehensive R Archive Network (CRAN)

4. Iannone, R., Cheng, J., Schloerke, B., Hughes, E., Lauer, A., & **Seo, J.** (2023). *gt: Easily Create Presentation-Ready Display Tables* (0.9.0) [Computer software]. `https://CRAN.R-project.org/package=gt`. *Over 1.5M download*.

3. **Seo, J.**, & Choi, S. (2020). *Youtubecaption: Downloading YouTube subtitle transcription in a tidy tibble data frame* [Computer software]. `https://CRAN.R-project.org/package=youtubecaption`. *Over 18K download*.

2. **Seo, J.**, & Choi, S. (2019). *Ezpickr: Easy data import using GUI file picker and seamless communication between an excel and r* [Computer software]. `https://CRAN.R-project.org/package=ezpickr`. *Over 31K download*.

1. **Seo, J.**, & Choi, S. (2019). *Mboxr: Reading, extracting, and converting an mbox file into a tibble* [Computer software]. `https://CRAN.R-project.org/package=mboxr`. *Over 25K download*.

Open-Source Project on GitHub

6. **Seo, J.** (2020). *Edmdown: Writing a reproducible article for journal of educational DataMining in r markdown.* `https://github.com/jooyoungseo/edmdown`. *R package version 0.0.0.9000.*

5. **Seo, J.**, Chan, T., Michaelis, J. E., & Rosenberg, J. M. (2020). *Islsdown: Writing a reproducible conference paper for the international society of the learning sciences annual meeting in r markdown.* `https://github.com/jooyoungseo/islsdown`. *R package version 0.0.0.9000.*

4. **Seo, J.**, & Rosenberg, J. M. (2020). *Jladown: Writing a reproducible article for journal of learning analytics in r markdown.* `https://github.com/jooyoungseo/jladown`. *R package version 0.0.0.9000.*

3. **Seo, J.** (2019). *Ezviewr: View tidy data in preferable spreadsheet.* `https://github.com/jooyoungseo/ezviewr`. *R package version 0.1.0.*

2. **Seo, J.** (2019). *tactileR: Converting r graphics into a braille ready-to-print PDF.* `https://github.com/jooyoungseo/tactileR`. *R package version 0.1.0.*

1. **Seo, J.**, & McCurry, S. (2019). *AROW: Accessible RMarkdown online writer.* `http://www.arowtool.com`

Officially Code_Contributing R Packages

- My GitHub pull requests have been peer-reviewed and merged for active data science R packages:

Chang, W., Cheng, J., Allaire, J., Xie, Y., & McPherson, J.

https://cran.r-project.org/web/packages/shiny/

2020

SHINY: WEB APPLICATION FRAMEWORK FOR R

- Contributed to improving keyboard and TTS accessibility for input widgets.

O'Hara-Wild, M., & Hyndman, R.

https://cran.r-project.org/web/packages/vitae/

2020

VITAE: CURRICULUM VITAE FOR R MARKDOWN

- Contributed to enabling LaTeX engine customization.
- Contributed to displaying multiple bibliographies based on lua filter.

Allaire, J., Xie, Y., et al.

https://cran.r-project.org/web/packages/rmarkdown/

2019

RMARKDOWN: DYNAMIC DOCUMENTS FOR R

- Contributed to improving ioslides_presentation accessibility for screen reading software.

Xie, Y.

https://cran.r-project.org/web/packages/bookdown/

2019

BOOKDOWN: AUTHORING BOOKS AND TECHNICAL DOCUMENTS WITH R MARKDOWN

- Developed context_document2, github_document2, beamer_presentation2, html_fragment2, html_notebook2, html_vignette2, ioslides_presentation2, slidy_presentation2 and rtf_document2 functions to enable R markdown users to utilize cross-references for figures and tables through bookdown package.

Allaire, J., Iannone, R., & Xie, Y.

https://cran.r-project.org/web/packages/distill/

2019

DISTILL: 'R MARKDOWN' FORMAT FOR SCIENTIFIC AND TECHNICAL WRITING

- Contributed to displaying more metadata for journal article bib_entries.
- Improved screen reader accessibility for navigation bar.
- Added missing Google Scholar meta tags for conference, technical report, and dissertation types.

Marwick, B.

https://git.io/JkJca

WORDCOUNTADDIN: WORD COUNTS AND READABILITY STATISTICS IN R MARKDOWN DOCUMENTS

2019

- Contributed to text_stats() function for R markdown users to Get a word count and some other stats for selected text (excluding code chunks and inline code).

Godfrey, A. J. R., Warren, D., Murrell, P., Bilton, T., & Sorge, V.

https://cran.r-project.org/web/packages/BrailleR/

2019

BRAILLER: IMPROVED ACCESS FOR BLIND USERS

- Contributed to BRLThis() function to enable blind R users to convert a graph into a pdf ready for embossing in Braille.

Teaching Experience ───────────────────────────

- IS 407: Introduction to Data Science (spring 2022-present).

- IS 569: Internship (spring 2022). *Advised Ankita Khiratkar (MS IM).*

- IS 589: Independent Study (spring 2022). *Advised Chetna Beri (MS IM).*

- INFO 399: Individual Study (spring 2022). *Advised Leo Zhang (CS undergrad –> Currently, Master's student at UCLA Data Science dept).*

- IS 389: Independent Study (spring 2022). *Advised Miso Kim (BS IS).*

- IS 226: Introduction to Human-Computer Interaction (fall 2021). *Co-teaching with Dr. Yang Wang.*

- Served as an annual review committee member for iSchool Ph.d. student Smirity Kaushik (advisor Dr. Yang Wang) (spring 2022).

- Served as a field exam committee member for iSchool Ph.D. candidate Jaihyun Park (advisor Dr. Ryan Cordell) (spring 2022).

Awards and Honors

ACM Richard Tapia Celebration of Diversity in Computing Conference *Virtual*
Qualcomm Scholarship *Sep. 2020*
- Selected as one of the outstanding doctoral consortium proposals.

Disability:IN *Alexandria, VA*
2020 NextGen Leaders *Feb. 2020 - Jul. 2020*
- Selected as one of the leaders in the U.S. for diversity.

AccessComputing, University of Washington *Seattle, WA*
AccessSTEM Resume contest winners Award *Dec. 2019*
- Sponsored by The National Science Foundation (NSF).

The First International Conference on Quantitative Ethnography *Madison, WI*
Best Doctoral Proposal Fellowship *Oct. 2019*
- Sponsored by Cengage.

The PDK Educational Foundation *University Park, PA*
Andrew V. Kozak Memorial Fellowship *2019*
- Awarded $1,500 for research contribution to public education.

The Spencer Foundation *Toronto, ON, Canada*
AERA Pre-Conference Travel Award *Apr. 2019*

The Pennsylvania State University *University Park, PA*
Delta Gamma Golden Anchor Award *2015, 2017*

The National Science Foundation (NSF) *Atlanta, GA*
ACM Richard Tapia Celebration of Diversity in Computing Conference Scholarship *Sep. 2017*
- Included free conference registration, shared hotel accommodations and a $500 travel stipend.

Microsoft Research *Atlanta, GA*
ACM Student Research Competition Travel Award *Sep. 2017*
- $500 travel stipend was awarded for ACM TAPIA 2017 Student Research Competition (SRC).

AccessComputing, University of Washington *Seattle, WA*
CSUN Conference Travel Award *Mar. 2017*
- Sponsored by The National Science Foundation (NSF).

College of Education *University Park, PA*
Summer Tuition Assistance Funding *2017*

College of Education *University Park, PA*
Graduate Student Travel Grant *Aug. 2016 - Present*

Teaching and Learning with Technology *University Park, PA*
Graduate Assistantship *Aug. 2016 - Present*

Hyomyoung Scholarship *Seoul, South Korea*
OUTSTANDING ACADEMIC AWARD *2014 - 2019*

ANC Scholarship Foundation *Lake View Terrace, CA*
ALL NATIONS CHURCH GRADUATE SCHOLARSHIP *2016*

Service

School of Information Sciences at the University of Illinois at Urbana-Champaign *Champaign, IL*
SEARCH COMMITTEE FOR DIRECTOR/ASSISTANT DEAN, DIVERSITY, EQUITY, INCLUSION, AND ACCESSIBILITY (DEIA) *April 2022 - Present*

School of Information Sciences at the University of Illinois at Urbana-Champaign *Champaign, IL*
DIVERSITY COMMITTEE *Sep. 2021 - Apr. 2022*

International Web for All Conference (W4A) 2022 *Virtual*
PROGRAM COMMITTEE MEMBER *Dec. 2021 - Feb. 2022*

15th International Conference on Educational Data Mining *Durham*
ACCESSIBILITY CHAIR *Oct. 2021 - Jul. 2022*

Special issue on ethnography and learning design *TechTrends*
JOURNAL REVIEWER *Sep. 2021*

The Network of Academic Programs in the Learning Sciences (NAPLeS) *International Society of the Learning Sciences*

REVIEWER *2020*
- Reviewed abstracts on equity and disability.

The Pennsylvania State University *University Park, PA*
COLLEGE OF EDUCATION TECHNOLOGY COMMITTEE *Aug. 2019 - May. 2020*
- Worked as a student committee member to support understanding of educational technology for College of Education.

The Pennsylvania State University *University Park, PA*
LIBRARIES' ACCESSIBILITY STUDENT ADVISORY GROUP *Aug. 2019 - May. 2020*

The 14th International Conference of the Learning Sciences (ICLS) *Nashville, TN*
REVIEWER *2019*

The ACM CHI Conference on Human Factors in Computing Systems (CHI 2020, 2021) *Honolulu, HI, Yokohama, Japan*
REVIEWER *2019, 2020*

The 1st International Conference on Quantitative Ethnography (ICQE) *Madison, WI*
REVIEWER *2019*

The 3rd Learning Sciences Graduate Student Conference (LSGSC) *Nashville, TN*
REVIEWER *2018*

The 2nd Learning Sciences Graduate Student Conference (LSGSC) *Bloomington, IN*
REVIEWER *2017*

Center for Online Innovation in Learning (COIL), The Pennsylvania State University *University Park, PA*
FUNDING REVIEWER *2016*

Current Memberships

- International Society of the Learning Sciences (ISLS)
- Association for Computing Machinery (ACM)
- American Statistical Association (ASA)
- International Society for Quantitative Ethnography (ISQE)
- International Association of Accessibility Professionals (IAAP)
- International Educational Data Mining Society (IEDMS)