JooYoung **Seo**

Ph.D. Candidate (ABD)

Learning, Design, and Technology, 301 Keller Building, University Park, PA 16802, USA

+1 814-777-5825 | jooyoung@psu.edu | jooyoungseo.com | jooyoungseo | jooyoungseo | sjystu

I am a learning scientist, software engineer, and internationally-certified accessibility professional.

Skills

Braille	UEB (Unified English Braille), Nemeth (Math), Korean, Japanese Brailles
Data Science	R (highly advanced: published 3 packages in CRAN), Python (advanced: tensorflow/keras/scikit-learn), SQL
Reproducible Report	Markdown/Rmarkdown, R shiny apps, Jupyter Notebook, LaTeX, Pandoc, lua
DevOps	Git, Docker, AWS, Travis CI, Cygwin
Front-End	HTML/CSS/JS/PHP/ARIA (advanced level to design according to WCAG 2.0/2.1), WordPress, Drupal, Hugo
Back-End	Unix/Linux Shell scripts, LAMP, Django, REST API
Compile Programming Languages	C/C++/C#, Java, Quorum (as basic level to review source codes and develop simple modules)
Quantitative Research	t-test, within-/between-subjects/Repeated Measures ANOVAs/ANCOVAs/MANOVAs/MANCOVAs, Regressions, HLM, Factor Analysis, Network Analysis, SEM, PCA, Unsupervised/Supervised Machine Learning
Qualitative Research	Virtual Ethnography, Content Analysis, Grounded Theory, Phenomenology, Case Studies, Interaction Analysis
Mixed Research	Text Mining, Quantitative Ethnography, Explanatory/Exploratory Sequential Mixed Methods
Languages	English/Korean (bilingual)

Working Experience

RStudio — *Redmond, WA*
Summer Intern — *May. 2020 - Aug. 2020*

ICE Soft — *Seoul, South Korea*
Co-Founder and Project Manager — *Jul. 2010 - Jun. 2011*

National Human Rights Commission of Korea — *Seoul, South Korea*
Intern — *May. 2010 - Nov. 2010*

Research Experience

IT Accessibility Team, Teaching and Learning with Technology (TLT) — *University Park, PA*
Graduate Assistant — *Aug. 2016 - Present*

Playful Learning and Inclusive Design Research Group — *University Park, PA*
Graduate Researcher — *Aug. 2016 - Present*

Online Interactions of the Blind Research Project — *University Park, PA*
Principal Investigator — *May. 2019 - Present*

Accessible RMarkdown Online Writer (AROW) Project, Teaching and Learning with Technology (TLT) — *University Park, PA*
Project Manager — *May. 2018 - Present*

Accessibility of Maker Toolkits Research Project — *University Park, PA*
Principal Investigator — *Jun. 2017 - Present*

Learning2CC Project — *University Park, PA*
Site Manager — *Feb. 2015 - Dec. 2015*

Avenue PM Research Group — *University Park, PA*
Graduate Researcher — *Sep. 2014 - May. 2016*

The Ministry of Knowledge Economy and Seoul National University *Seoul, South Korea*
STUDENT RESEARCHER *Feb. 2012 - Mar. 2012*

Certificates

IBM and Coursera *https://www.coursera.org/account/accomplish*
WHAT IS DATA SCIENCE? *Feb. 2020 - Present*

NV Access *Lucia South, QLD, Australia*
CERTIFIED EXPERT WITH NVDA (NON-VISUAL DESKTOP ACCESS) SCREEN READER *Dec. 2019 - Present*

International Association of Accessibility Professional *Atlanta, GA*
CERTIFIED PROFESSIONAL IN ACCESSIBILITY CORE COMPETENCIES *Apr. 2017 - Present*

Korean Ministry of Education *Sejong, South Korea*
ENGLISH TEACHER CERTIFICATE FOR SECONDARY EDUCATION *Feb. 2014 - Present*

Korean Ministry of Education *Sejong, South Korea*
GENERAL EDUCATION TEACHER CERTIFICATE FOR SECONDARY EDUCATION *Feb. 2014 - Present*

Education

The Pennsylvania State University *University Park, PA*
PH.D. IN LEARNING, DESIGN, AND TECHNOLOGY *Aug. 2016 - Present*
- Expected graduation: May 2021.
- Dissertation Title: "Discovering Informal Learning Cultures of Blind Individuals Pursuing STEM Disciplines: A Quantitative 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 *Aug. 2014 - May. 2016*
- GPA 3.97/4.0.

Sungkyunkwan University *Seoul, South Korea*
B.A. IN EDUCATION *Mar. 2009 - Feb. 2014*
- GPA 4.08/4.50.

Sungkyunkwan University *Seoul, South Korea*
B.A. IN ENGLISH LITERATURE *Mar. 2009 - Feb. 2014*
- GPA 4.08/4.50.

Publications

REFEREED JOURNAL PAPERS

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`

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

Seo, J., & Richard, G. T. (in press-). 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*. International Society of the Learning Sciences (ISLS).

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.

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).

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.

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). International Society of the Learning Sciences (ISLS).

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.

Publications in Healthcare

- I have contributed to the following publications for their methods and research designs.

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

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`

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

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`

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.

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.

Software Developments and Publications

Data Science Packages in Comprehensive R Archive Network (CRAN)

Seo, J., & Choi, S. (2020). *Youtubecaption: Downloading youtube subtitle transcription in a tidy tibble data frame.* `https://CRAN.R-project.org/package=youtubecaption`

Seo, J., & Choi, S. (2019). *Ezpickr: Easy data import using gui file picker and seamless communication between an excel and r.* `https://CRAN.R-project.org/package=ezpickr`

Seo, J., & Choi, S. (2019). *Mboxr: Reading, extracting, and converting an mbox file into a tibble.* `https://CRAN.R-project.org/package=mboxr`

Open-Source Project on GitHub

Seo, J. (2019). *Edmdown: Writing a reproducible article for journal of educational datamining in r markdown.* `https://github.com/jooyoungseo/edmdown`

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

Seo, J. (2019). *Jladown: Writing a reproducible article for journal of learning analyticsin r markdown.* `https://github.com/jooyoungseo/jladown`

Seo, J. (2019). *TactileR: Converting r graphics into a braille ready-to-print pdf.* `https://github.com/jooyoungseo/tactileR`

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

Officially Code_Contributing R Packages

- My 18 GitHub pull requests have been peer-reviewed and merged for active data science R packages:

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

rmarkdown: Dynamic Documents for R

2019

- Contributed to improving ioslides_presentation accessibility for screen reading software.

Xie, Y.

bookdown: Authoring Books and Technical Documents with R Markdown

2019

- 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.

distill: 'R Markdown' Format for Scientific and Technical Writing

2019

- 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.

wordcountaddin: Word counts and readability statistics in R markdown documents

2019

- Contributed 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.

BrailleR: Improved Access for Blind Users

2019

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

Presentations

Peer-Reviewed Conference Presentations

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

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.

Awards and Honors

AccessComputing, University of Washington · *Seattle, WA*
AccessSTEM Resume contest winners Award · *Dec. 2019*

The First International Conference on Quantitative Ethnography · *Madison, WI*
Best Doctoral Proposal Fellowship · *Oct. 2019*

The PDK Educational Foundation · *University Park, PA*
Andrew V. Kozak Memorial Fellowship · *2019*

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 · *2017*

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

The National Science Foundation (NSF) · *Atlanta, GA*
ACM Richard Tapia Celebration of Diversity in Computing Conference Scholarship · *Sep. 2017*

Microsoft Research · *Atlanta, GA*
ACM Student Research Competition Travel Award · *Sep. 2017*

AccessComputing, University of Washington · *Seattle, WA*
CSUN Conference Travel Award · *Mar. 2017*

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*

ChungInwook Scholarship Foundation · *Seoul, South Korea*
Academic Scholarship for Doctoral Research · *2016 - 2018*

ANC Scholarship Foundation · *Lake View Terrace, CA*
All Nations Church Graduate Scholarship · *2016*

National Institute for International Education, Korean Government · *Seoul, South Korea*
Future Interdisciplinary Study of Global Korea Scholarship for Master's Research · *2014 - 2016*

Sungkyunkwan University · *Seoul, South Korea*
Academic Achievement Scholarship · *2009 - 2013*

Notes

- This CV is reproducible; all the source code behind this CV is available at this GitHub repo.

- More comprehensive CV is also available if you click this link.