

JooYoung Seo

PH.D. CANDIDATE (ABD); RSTUDIO TRUSTED DATA SCIENCE INSTRUCTOR

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

Work Experience

Rstudio PBC

Boston, MA

SOFTWARE ENGINEER INTERN

May. 2020 - Aug. 2020

- Worked on accessibility improvement projects for Rstudio Server and Desktop IDE, Shiny and Rmarkdown.
- Patched Shiny's bootstrap dependencies to improve navigation of Shiny apps for screen-reader and keyboard users (alert, tooltip, popover, modal dialog, dropdown, tab Panel, collapse, and carousel elements). (Shiny PR #2911)
- Made selectInput widget accessible by patching selectize-a11y-plugin JS library. (Shiny PR #2993)
- Developed a way to pass dynamic alt attribute for reactive plot objects in Shiny UI. (Shiny PR #3006)
- Made fontawesome and glyphicon readable to assistive technologies in Shiny UI. (Shiny PR #2917)
- Developed JS code to resolve accessibility issue in highlighted code blocks of HTML output produced by Pandoc for screen reader users. (Rmarkdown PR #1833)
- Authored technical documents on how to run RStudio Server via Windows Subsystem for Linux and RStudio Screen Reader Support.

ICE Soft

Seoul, South Korea

CO-FOUNDER AND PROJECT MANAGER

Jul. 2010 - Jun. 2011

- Co-founded and managed a start-up company to develop Android-based navigation App and assistive technology for blind people.
- Applied for and received a \$30,000 fund from the city of Seoul.

Education

The Pennsylvania State University

University Park, PA

PH.D. IN LEARNING, DESIGN, AND TECHNOLOGY

Aug. 2016 - Present

- Expected graduation: June 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

DOUBLE B.A. IN EDUCATION, ENGLISH LITERATURE

Mar. 2009 - Feb. 2014

- GPA 4.08/4.50.

Skills

Braille

UEB (Unified English Braille), Nemeth (Math), Korean, Japanese Brailles

Data Science

R (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

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

Publications

REFEREED JOURNAL PAPERS

Choi, S., & **Seo, J.** (2020). Trends in healthcare research on visual impairment and blindness: Use of bibliometrics and hierarchical cluster analysis. *Ophthalmic Epidemiology*, 0(0), 1–36. <https://doi.org/10.1080/09286586.2020.1863993>. PMID: 33380253.

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. (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). Nashville, TN: 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. Madison, WI. Awarded the best Doctoral Consortium Proposal Cengage fellowship.

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). Nashville, TN: 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). London, UK: 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, pp. 573–576). Philadelphia, PA: International Society of the Learning Sciences (ISLS).

DATA SCIENCE PACKAGE DEVELOPMENTS

Seo, J., & Choi, S. (2020). *Youtubecaption: Downloading YouTube subtitle transcription in a tidy tibble data frame*. Retrieved from <https://CRAN.R-project.org/package=youtubecaption>. Over 9543 download.

Seo, J., & Choi, S. (2019). *Ezpickr: Easy data import using GUI file picker and seamless communication between an excel and r*. Retrieved from <https://CRAN.R-project.org/package=ezpickr>. Over 19K download.

Seo, J., & Choi, S. (2019). *Mboxr: Reading, extracting, and converting an mbox file into a tibble*. Retrieved from <https://CRAN.R-project.org/package=mboxr>. Over 15K download.