

Bogeum Choi

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Research Interests

My research is in the areas of human information interaction, human-computer interaction, and health informatics. I investigate how individuals interact with information and systems in various contexts, such as learning, conversational search, and health management. My research also explores factors influencing these interactions (e.g., cognitive profile), as well as the use of a search-assistant tool during complex information tasks. I have conducted research at the intersection of social media and health information, and I am extending my work into how people use digital technologies to support their health and well-being more generally.

Education

University of North Carolina, Chapel Hill, NC Aug 2018 - May 2025
PhD. Candidate, Information Science

- Dissertation: Working Memory in Search and Sensemaking
- Committee: Jaime Arguello (chair), Rob Capra, Heather O'Brien, Jacek Gwizdka, Casey Rawson

University of North Carolina, Chapel Hill, NC Aug 2016 - May 2018
M.S in Information Science

Sungkyunkwan University, Seoul, Republic of Korea Mar 2011 – Jan 2016
B.S. in Psychology and B.A. in Information and Library Science

Publications

Under Review

Kim, H., & **Choi, B.** (under review). Understanding Health Information Credibility across UCG Platforms: Varying Influences of Credibility Features and Prior Knowledge.

Choi, B., Wang, L. C., Kang, R. A., Ho, I. Y., Johnny, S., Chaliparambil, R., & Chen, A. T. (under review). What should I do?: Information and support needs relating to substance use on Reddit.

Chen, A. T., **Choi, B.**, Tveleneva, A., Wang, L. C., Kang, R. A., Conway, M., & Wong, S. H. (under review). Looking back: Retrospective views of substance use stigma-related experiences over time.

In press

Kim, H., **Choi, B.**, & Huh, Y. (in press). Unpacking College Students' Mental Health Discourse through YouTube Comments: Insights from Topic Modeling and Sentiment Analysis.

Ward, A., **Choi, B.**, & Capra, R. (in press). Designing Search Engine Result Pages for Immersive Virtual Reality: Insights from Eye-Tracking and User Perception Data.

Kim, H., **Choi, B.**, Huh, Y., & Daly, B. (in press). Understanding Community 'Likes' and Clinical Perspective in Mental Health Discourse: Insights from YouTube Comments on College Students' Mental Health.

Journal Articles

Choi, B., Casteel S., Arguello, A., & Capra, R. (2023). Better Understanding Procedural Search Tasks: Perceptions, Behaviors, and Challenges. *ACM Transactions of Information Systems*, 42(3), 1-32.

Choi, B., Arguello, J., Capra, R., & Ward, A. R. (2023). The Influences of a Knowledge Representation Tool on Searchers with Varying Cognitive Abilities. *ACM Transactions on Information Systems*, 41(1), 1-35.

Choi, B., Kim, H., & Huh, Y. (2021). Seeking Mental Health Support Among College Students in Video-Based Social Media: Content and Statistical Analysis of YouTube Videos. *JMIR Formative Research*, 5(11)

Choi, B., Ward, A., Li, Y., Arguello, J., & Capra, R. (2019). The effects of task complexity on the use of different types of information in a search assistance tool. *ACM Transactions on Information Systems*, 38(1), 1-28.

Arguello, J., **Choi, B.**, & Capra, R. (2018). Factors influencing users' information requests: Medium, target, and extra-topical dimension. *ACM Transactions on Information Systems*, 36(4), 1-37.

Conference Articles

Choi, B., & Arguello, J. (2025, March). The effects of working memory during a search and sensemaking task.

Choi, B., Arguello, J., & Capra, R. (2023, March). Understanding Procedural Search Tasks “in the Wild”. In *Proceedings of the 2023 Conference on Human Information Interaction & Retrieval* (pp. 24-33).

Ward, A., **Choi, B.**, & Capra, R. (2023, March). Eyes on Immersive Search: Eye-Tracking Study of Search Engine Result Pages in Immersive Virtual Environments. In *Proceedings of the 2023 Conference on Human Information Interaction & Retrieval* (pp. 43-54).

Avula, S., **Choi, B.**, & Arguello, J. (2022). The Effects of System Initiative during Conversational Collaborative Search. *Proceedings of the ACM on Human-Computer Interaction*, 6CSCW1 (2022), 1–30.

Choi, B., Casteel, S., Capra, R., & Arguello, J. (2022, March). Procedural knowledge search by intelligence analysts. In *Proceedings of the 2022 Conference on Human Information Interaction & Retrieval* (pp. 169-179).

Choi, B., Arguello, J., Capra, R., & Ward, A. R. (2021). OrgBox: A Knowledge Representation Tool to Support Complex Search Tasks. In *Proceedings of the 2021 Conference on Human Information Interaction & Retrieval*

Crescenzi, A., Capra, R., **Choi, B.**, & Li, Y. (2021, March). Adaptation in information search and decision-making under time constraints. In *Proceedings of the 2021 conference on human information interaction & Retrieval*

Choi, B., & Arguello, J. (2020, March). A qualitative analysis of the effects of task complexity on the functional role of information. In *Proceedings of the 2020 Conference on Human Information Interaction & Retrieval*

Choi, B., Capra, R., & Arguello, J. (2019). The effects of working memory during search tasks of varying complexity. In *Proceedings of the 2019 Conference on Human Information Interaction & Retrieval* (pp. 261-265).

Kim, H., & **Choi, B. (2018).** A comparative examination of factors that affect the credibility of health information on social media. *Proceedings of the Association for Information Science and Technology*, 55(1), 843-844.

Capra, R., Arguello, J., O'Brien, H., Li, Y., & **Choi, B. (2018, June).** The effects of manipulating task determinability on search behaviors and outcomes. In *The 41st International ACM SIGIR Conference on Research & Development in Information Retrieval* (pp. 445-454).

Conference Posters

Chen, A. T., Wang, L. C., **Choi, B.**, & Babitts, A. (2024, November 9-13). *Making Sense of Qualitative Data Using Interactive Network Visualization: A Case Study of Narratives Concerning Stigma Relating to Substance Use* [Poster Abstract]. AMIA 2024 Annual Symposium, San Francisco, CA, United States.

Non-referred Publications

Avula, S., **Choi, B.**, & Arguello, J. (2023). *Why and When: Understanding System Initiative during Conversational Collaborative Search*. arXiv preprint arXiv:2303.13484.

Presentations

Conference Presentations

The Effects of Working Memory During a Search and Sensemaking Task, *CHIIR, Melbourne VIC, AUS* Mar 2025

Understanding Procedural Search Tasks “in the Wild”, *CHIIR, Austin TX, USA* Mar 2023

Procedural Knowledge Search by Intelligence Analysts, <i>CHIIR, Regensburg, Germany</i>	Mar 2022
OrgBox: A Knowledge Representation Tool to Support Complex Search Tasks, <i>CHIIR, Canberra ACT, Australia</i>	Mar 2021
A qualitative analysis of the effects of task complexity on the functional role of information, <i>CHIIR, Vancouver BC, Canada</i>	Mar 2020
A comparative examination of factors that affect the credibility of health information on social media, <i>ASIS&T, Vancouver BC, Canada</i>	Oct 2018

Invited Talks

Seeking Mental Health Support on YouTube, <i>American Medical Informatics Association (AMIA) Mental Health Informatics Working Group Meeting</i>	May 2022
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Research Projects (Selected)

Human-AI collaboration in annotating audio data

- Phase 1: Conducted a user study with language analysts (N = 30) in an intelligence community to identify the types of OCs (operator comments made by language analysts while transcribing audio data to help others make sense of the transcript); performed qualitative analysis on OCs (N = 1674) to develop a taxonomy of OC types
- Phase 2: Conducted a user study to evaluate the usability of the system that enables analysts to make structured OCs by incorporating the OC taxonomy
- Phase 3: Conduct a user study to evaluate language analysts' interaction with an LLM-powered system that predicts OC locations and types, focusing on usability, trust, and impact on decision-making.

Role of working memory in search and sensemaking – Dissertation project

- Designed and conducted a think-aloud study (N = 44) to capture participants' cognitive processes
- Collected diverse types of data, including search logs, observations, surveys and interviews
- Analyzed the data using both quantitative and qualitative techniques
- Prepared and submitted a manuscript

Stigma experiences of individuals with substance use disorder

- Led a team-based content analysis of open-ended survey responses (N = 510), focusing on stigma mechanisms, settings, and actors
- Conducted qualitative analysis to explore cognitive, emotional, and behavioral aspects of stigma experiences and their long-term effects
- Collaborated on the preparation and submission of manuscripts

Information needs of individuals with substance use

- Led a content analysis of Reddit posts (N = 189) to identify informational and other types of support needs among individuals with substance use
- Prepared and submitted a manuscript

Understanding community engagement and mental health discourse on YouTube

- Performed a content analysis of YouTube comments (N = 200) on videos about college students' mental health to identify qualitative characteristics of the comments
- Performed an inductive content analysis of YouTube videos (N = 452) to characterize types of videos concerning college students' mental health; collaborated with a clinical psychologist to develop themes
- Collaborated on the preparation and submission of manuscripts

Procedural knowledge seeking and use

- Conducted a survey study (N = 128) using Amazon's Mechanical Turk platform to investigate how people seek and use information for procedural tasks
- Conducted a remote user study (N = 36) to investigate search behaviors and challenges during procedural tasks

- Conducted a survey study (N = 22) to understand how intelligence analysts use a procedural knowledge database
- Prepared and submitted manuscripts for each study, and presented them at conferences

OrgBox: Use of knowledge organization tool during complex search tasks

- Designed and conducted a lab study (N = 32) to evaluate the effects of a knowledge organization tool on individuals' search behaviors, perceptions, and task outcomes
- Prepared and submitted a manuscript

Effects of cognitive abilities during information-seeking tasks

- Designed and conducted a lab study (N = 32) to investigate the effects of cognitive abilities (working memory, switching) on how individuals use and perceive the usefulness of a knowledge organization tool
- Designed and conducted a lab study (N = 32) to investigate the effects of cognitive abilities (perceptual speed, working memory, inhibition) on how searchers interact with varying aggregated search interface
- Designed and conducted a lab study (N = 24) to investigate the effects of working memory on searchers' behaviors and perceptions during tasks of varying complexity
- Prepared and submitted manuscripts for each study, and presented some at conferences

Teaching Experience

Guest Lecture, University of Washington – Seattle, WA May 2022

- Taught a session on Usability Testing Plan and Usability Mobile Applications for BIME 554: Biomedical Information Interactions and Designs

Guest Presentation, University of North Carolina – Chapel Hill, NC Mar 2021

- Presented on qualitative analysis and facilitated a question-driven discussion in INLS 581: Research Methods Overview

Korean Language Teacher, Chapel Hill-Durham Korean School – Chapel Hill, NC Aug 2019 - May 2022

- Taught Korean to middle school students of diverse cultural backgrounds

Teaching Training, University of North Carolina – Chapel Hill, NC Aug 2019 - Dec 2019

- Completed a Teaching Seminar course at UNC SILS, focusing on pedagogical strategies and best practices for teaching in information science
- Audited INLS 581: Research Methods Overview for observations and exercises

Professional Experience

Contract Worker, Korea Institute of Science and Technology Information (KISTI) Jan 2016 - June 2016
– Seoul, Republic of Korea

- Performed heuristic evaluations on a website and wrote reports with recommendations for improvement
- Managed and updated web content on a daily basis
- Organized and managed a monthly in-person event to foster engagement with citizens

Academic Service

Peer Review

Transactions on Information Systems	2025
Humanities and Social Sciences Communications	2025
Archives of Public Health	2025
Special Interest Group on Information Retrieval (SIGIR)	2025
Conference on Human Information Interaction and Retrieval (CHIIR)	2021, 2022, 2023, 2025

Conference on Human-Computer Interaction (CHI)	2025
Association for Information Science and Technology (ASIS&T)	2024, 2025
American Medical Informatics Association (AMIA) Clinical Informatics Conference	2021

Committee

SIGIR Program Committee	2025
CHIIR Program Committee	2021, 2022, 2023, 2025
ASIS&T SIG-USE Symposium Committee Co-Chair	2024, 2025

Leadership & Representation

UNC SILS Doctoral Student Association (DSA) representative	2021, 2022
UNC Global Grads Ambassador	2021, 2022, 2023, 2024

Awards

Student Travel Grant, ACM SIGIR	2020, 2021, 2022, 2025
Best Reviewer Award, ASIS&T	2024
Student Travel Grant, ASIS&T SIG-USE	2024
Edward G. Holley Research Grant	2023
Honorable Mention, Best Paper Award, CSCW	2022
UNC-SILS/Carnegie Research Grant	2018