Kei Yoshida

Doctoral Student
Virtual Environment Navigation Lab (VENLab)
Department of Cognitive, Linguistic, and Psychological Sciences
Brown University
Providence, RI 02912 USA
Email: kei_yoshida@brown.edu

EDUCATION

2020 – current **Ph.D. in Cognitive Science**, Department of Cognitive, Linguistic, and Psychological Sciences (CLPS), Brown University, Providence, RI
Dissertation: *Pedestrian interactions at local and global levels in human crowds* (Advisor: Dr. William H. Warren)

2023 – current **M.A. in Computer Science**, Brown University, Providence, RI

2016 – 2020 **B.A. in Computer Science & Psychology**, Coe College, Cedar Rapids, IA
Honors: *Magna Cum Laude*, Phi Beta Kappa
Senior Honors Thesis: *Perceptual-motor recalibration in naturalistic and virtual environments* (Advisor: Dr. Benjamin Chihak)

RESEARCH EXPERIENCE

2020 – current **Graduate Student Researcher,** Dept. of CLPS, Brown University

- Preliminary Exam: *Human collective behavior as visual influence networks: What we can learn from other social networks*. Conducted an extensive literature review of network analysis methods, and proposed future directions to study network structures of crowd dynamics and a new experimental design to manipulate them.
- First-Year Project Report: *Reconstruction of interaction networks in walking crowds* (Advisor: Dr. William H. Warren). Analyzed behavioral data to reconstruct the structure and dynamics of leadership interaction networks in human crowds. Applied a series of mathematical and statistical measure, such as Time-Dependent Delayed Correlation (TDDC) and network theory, using MATLAB and Python.

2019 – 2020 **Undergraduate Student Researcher,** Dept. of Psychology, Coe College

- Senior Honors Thesis: *Perceptual-motor recalibration in naturalistic and virtual environments* (Advisor: Dr. Benjamin Chihak). Designed series of experiments systematically investigating recalibration effects in rotational locomotion in naturalistic and virtual environments. Developed a virtual environment in Unity using C#.

2019 **Undergraduate Student Researcher,** Dept. of Computer Science, Coe College

- Research Project: *Technology assisted review with iterative classification* (Advisor: Dr. Stephen Hughes). Developed a software tool to explore data mining using Python and Java, and implemented a Naive Bayes classifier for text classification.

2018 – 2019 **Research Assistant,** Dept. of Psychology, Coe College

- Research Project: *Simple models of movement coordination account for limited portions of pedestrian road-crossing behavior in virtual environments* (Advisor: Dr. Benjamin Chihak). Assisted in series of

experiments investigating movement-coordination strategies used for gap-interception within a virtual environment created in Unity.

2018 **Research Assistant/Software Designer,** Dept. of Psychology, Coe College
- Research Project: *How roadway design affects cyclist-motorist interactions* (Advisor: Dr. Benjamin Chihak). Collected and analyzed data for experiment exploring the effects of roadway designs on behaviors of motorists. Created the program designed to work on a device used to collect a variety of data using Arduino software and hardware (C++).

2018 **Programming Technician,** Dept. of Biology, Coe College
- Research Project: *GIS-based study on topographical preference of common tree species in Palisades-Kepler State Park, IA* (Research lead: Abhinav Shrestha). Created Python scripts used to analyze geographical data in ArcGIS software.

RELEVANT COURSES & SKILLS

Courses

Brown University (2020 – current)
Data Science, Computer Vision, Deep Learning, Statistical Inference, Human-Computer Interaction, Perceiving and Acting in 3D, Perception and Action, Applied Regression Analysis

Coe College (2016 – 2020)
Principles of Computer Graphics, Data Structures & Algorithms, Programming Languages, Interactive System Design, Object Oriented Programming, Software Engineering, Foundations of Computer Science, Foundations of Advanced Mathematics, Research Methods, Statistical Methods and Data Analysis, Sensation and Perception, Memory & Cognition, Introduction to Biopsychology, Social Psychology, Organizational Psychology, Personality, Abnormal Psychology

Programming Languages
Python, MATLAB, C++, Julia, C#, Bash, SQL, R, HTML/CSS, Javascript, Java

Software & Instruments
VS Code, Visual Studio, Git/GitHub, Jupyter Notebooks, SPSS Statistics Software, Unity, DJI Mavic 3 Pro (Part 107 certified UAS pilot), HTC Vive, SSH, RStudio, Atom, IntelliJ IDEA, Xcode, Adobe (Photoshop, Premiere, Illustrator)

Languages
Proficient in English & Japanese (written & spoken)

RELEVANT EXPERIENCE

Teaching Experience

2019 – current **Teaching Assistant**
- Brown University: CLPS-0700 Social Psychology (Fall 2023), CLPS-0010 Mind, Brain, and Behavior, (Fall 2023 & Fall 2024), CLPS-0100 Learning and Conditioning (Spring 2022)
- Coe College: PSY-300 Statistical Methods and Data Analysis

2017 – 2020 **Tutor**, Coe College
- Computer Science: Computer Science I & II, Data Structures and Algorithms
- Psychology: Introductory Psychology, Research Methods, Statistical Methods and Data Analysis, Memory and Cognition, Organizational Psychology, Personality

Relevant Experience

2018 – 2020 **Psychology Department Student Worker**, Coe College
- Assist professors in the department with preparing for classes and research.

2018 **Assistant Client Support Intern**, WatchPoint Data, Inc., Cedar Rapids, IA
- Administered technical support, patch management through Solarwinds N-Central, implementation of a naming convention across the customer base, and other technical duties as assigned.

2017 **IT Technician,** Coe College Information Technology
- Responded to and resolved technical issues and difficulties throughout campus in person and via phone.

PUBLICATIONS & PRESENTATIONS

Publications

Warren, W. H., Falandays, J. B., **Yoshida, K.**, Wirth, T. D., & Free, B. A. (2023). Human crowds as social networks: Collective dynamics of consensus and polarization. *Perspectives on Psychological Science, 0*(0). https://doi.org/10.1177/17456916231186406

Yoshida, K., & Warren, W. H. (2023). *Reconstruction of visual influence networks in walking crowds.* Manuscript in preparation.

Thesis & Reports

Yoshida, K. (2023). *Human collective behavior as visual influence networks: What we can learn from other social networks.* [Unpublished first-year project report, Brown University].

Yoshida, K. (2021). *Reconstruction of interaction networks in walking crowds.* [Unpublished paper for the preliminary exam, Brown University].

Yoshida, K. (2020). *Perceptual-motor recalibration in naturalistic and virtual environments.* [Undergraduate thesis, Coe College]. Coe College Stewart Memorial Library. https://coecollege.on.worldcat.org/oclc/1258120465

Research Talks

Warren, W.H., & **Yoshida, K.** (2023, June 30). Human crowds as visual influence networks: The question of leadership. Invited talk, "Beyond the dyad: Ecological approaches to collective dynamics" Symposium, XXI International Conference on Perception and Action, Guadalajara, Mexico.

Yoshida, K., & Warren, W. H. (2023, June 28). *Structural analysis and topological manipulation of visual influence networks in walking crowds* [Conference session]. Pedestrian and Evacuation Dynamics 2023, Eindhoven University of Technology, Eindhoven, Netherlands.

Yoshida, K. (2021). R*econstruction of leadership interaction networks in walking crowds* [Presentation for the CLPS department]. First-Year Talks 2021, Brown University, Providence, RI.

Yoshida, K. (2020). *Perceptual-motor recalibration in naturalistic and virtual environments* [Presentation]. Perception & Action Seminar Series, Brown University, Providence RI.

Bordwell, J., Nixon, K., **Yoshida, K.**, & Chihak, B. (2019) *Perceptual-motor control strategies used by pedestrians crossing bicycle traffic in virtual environments* [Presentation]. Psychology Research Symposium 2019, Coe College, Cedar Rapids, IA.

Alarcon-Furman, Y., Thoma, R., Tollefsrud, C., **Yoshida, K.**, & Farrell, S. (2018) *The relationship between psychological capital, grit, and academic outcomes* [Presentation]. Psychology Research Symposium 2018, Coe College, Cedar Rapids, IA.

Poster Presentations

Yoshida, K., & Warren, W. H. (2023). *Visual influence networks in walking crowds.* [Poster presentation]. Vision Science Society, St. Pete Beach, FL.

Yoshida, K., & Warren, W. H. (2022). Visual interaction networks and leadership in walking crowds. *Journal of Vision*, *22*(14), 3628-3628. https://doi.org/10.1167/jov.22.14.3628 Poster presented for the annual meeting of the Vision Science Society, St. Pete Beach, FL.

Yoshida, K., & Chihak, B. (2020). *The transfer of perceptual-motor recalibration between virtual and naturalistic environments* [Poster presentation]. 61st Annual Meeting of the Psychonomic Society, held virtually.

Chihak, B., **Yoshida, K.**, & Bordwell, J. (2019). *Simple models of movement coordination account for limited portions of pedestrian road-crossing behavior in virtual environments* [Poster presentation]. 60th Annual Meeting of the Psychonomic Society, Montreal, QC, Canada.

Penalver, R. M., Glynn, L., Douglass, G., **Yoshida, K.**, Golder, M., & Hutton, H. (2019). *"50 First Dates": A community based research and service-learning project in a senior level cognitive psychology course* [Poster presentation]. 60th Annual Meeting of the Psychonomic Society, Montreal, QC, Canada.

Yoshida, K., Shrestha, A., & Chihak, B. (2019). *How roadway design affects cyclist-motorist interactions* [Poster presentation]. 2019 Tri-State Undergraduate Psychology Research Conference, Loras College, Dubuque, IA.

Bordwell, J., Nixon, K., **Yoshida, K.**, & Chihak, B. (2019). *Simple models of movement coordination account for mere fractions of road-crossing behavior* [Poster presentation]. Student Research Symposium 2019, Coe College, Cedar Rapids, IA.

Alarcon-Furman, Y., Thoma, R., Tollefsrud, C., **Yoshida, K.**, & Farrell, S. (2018). *The relationship between psychological capital, grit, and academic outcomes* [Poster presentation]. Student Research Symposium 2018, Coe College, Cedar Rapids, IA.

Alarcon-Furman, Y., Thoma, R., Tollefsrud, C., **Yoshida, K.**, & Farrell, S. (2018). *The relationship between psychological capital, grit, and academic outcomes* [Poster presentation]. 2018 Tri-State Undergraduate Psychology Research Conference, Coe College, Cedar Rapids, IA.

SCHOLARSHIP, AWARDS, & HONORS

2023 Open Graduate Education Program, Brown University

2020 – 2021	Kenneth R. and Pamela L. Galner Graduate Fellowship Recipient, Brown University ($91,241)
2020	Richard H. Bahwell Prize in Psychology, Coe College
2020	McElroy Trust Fellowship Finalist, Waterloo, Iowa
2020	Phi Beta Kappa, National Honor Society
2019	Clark Merit Scholars Finalist, Coe College
2019	Strata, Senior Women's honor society at Coe College
2019	Mortar Board, American national honor society for college seniors
2018	Psi Chi, International honor society in Psychology
2017	Alpha Lambda Delta, National honors society for first-year students

SERVICE

Brown University (2020 – current)

2023	International Graduate Peer Mentor
2021 – 2022	CLPS Graduate Student Representative
2020 – 2021	CLPS Diversity and Inclusion Action Plan (DIAP) Committee
2021	International Student Mentor

Coe College (2016 – 2020)

2016 – 2020	International Club Executive Member (President, Vice President, Secretary)
2018 – 2020	Diversity Inclusion Collaboration Team
2017	International Students Orientation Leader

PROFESSIONAL REFERENCES

Dr. William H. Warren, Chancellor's Professor of Cognitive, Linguistic and Psychological Sciences, Brown University, William_Warren_Jr@brown.edu

Dr. Benjamin Chihak, Assistant Professor of Psychology, Coe College, bchihak@coe.edu