Kei Yoshida

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Brown University | Providence, RI, USA https://kyoshida14.github.io

EDUCATION

2020-Present **Brown University**, Providence, RI, USA
Ph.D. in Cognitive Science (Perception and Action)

- Dissertation: "*Pedestrian interactions at local and global levels in human crowds*" (Advisor: Dr. Willam H. Warren)

2023-Present **Brown University**, Providence, RI, USA
M.S. in Computer Science

2016-2020 **Coe College**, Cedar Rapids, IA, USA
B.A. in Computer Science and Psychology, *Magna Cum Laude*, Phi Beta Kappa

- Thesis: "*Perceptual-motor recalibration in naturalistic and virtual environments*" (Advisor: Dr. Benjamin Chihak)

RESEARCH EXPERIENCE

2023-Present **Dissertation Research**: "*Pedestrian interactions at local and global levels in human crowds*" (Advisor: Dr. Willam H. Warren)
Department of Cognitive and Psychological Sciences, Brown University

- Designed and conducted a behavioral experiment investigating the effects of covert and explicit leaders in walking crowds.
- Analyzed the data and simulated pedestrian trajectories using existing models of pedestrian behavior, using Python and Julia.

2020-2022 **Ph.D. First-Year Project**: "*Reconstruction of interaction networks in walking crowds*" (Advisor: Dr. Willam H. Warren)
Department of Cognitive and Psychological Sciences, Brown University

- 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.

2024 **Visiting Research Scholar** (Collaborator: Dr. Mario di Bernardo)
Scuola Superiore Meridionale & University of Naples Federico II, Naples, Italy

- Conducted independent research on crowd dynamics, and collaborated with an interdisciplinary team of mathematicians and engineers to exchange knowledge on experimental psychology and modeling methods.
- Provided experimental data for analysis and received valuable feedback on research methodology.

2019-2020 **Senior Honors Thesis**: "*Perceptual-motor recalibration in naturalistic and virtual environments*" (Advisor: Dr. Benjamin Chihak)
Department of Psychology, Coe College

- Designed series of experiments systematically investigating recalibration effects in rotational locomotion in naturalistic and virtual environments.
- Developed a virtual environment in Unity, using C#.

2018-2019 **Research Project**: *Simple models of movement coordination account for limited portions of pedestrian road-crossing behavior in virtual environments* (Advisor: Dr. Benjamin Chihak)
Department of Psychology, Coe College

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

2018 **Research Project:** *How roadway design affects cyclist-motorist interactions* (Advisor: Dr. Benjamin Chihak)
Department of Psychology, Coe College

- 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, using C++.

TEACHING EXPERIENCE

2019-2023 **Teaching Assistant**

Brown University: Social Psychology, Learning and Conditioning, & Mind, Brain, and Behavior
Coe College: 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

PUBLICATIONS & PRESENTATIONS

Journal Articles, Conference Proceedings, & Published Thesis

Yoshida, K., Taylor, H., & Warren, W. H. (2025). The influence of explicit and covert leaders on human crowd motion. EPJ Web of Conferences, 334, 04010. https://doi.org/10.1051/epjconf/202533404010

Yoshida, K., di Bernardo, M., & Warren, W. H. (2025). *Visual influence networks in walking crowds*. bioRxiv. https://doi.org/10.1101/2025.01.29.635594

Warren, W. H., Falandays, J. B., **Yoshida, K.**, Wirth, T. D., & Free, B. A. (2024). Human crowds as social networks: Collective dynamics of consensus and polarization. *Perspectives on Psychological Science, 19*(2), 522–537. https://doi.org/10.1177/17456916231186406

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

Conference Presentations & Posters (Selected)

Yoshida, K., Feldmann, S., & Warren, W.H. (2025, September 11). *Simulating and Quantifying the Influence of Covert and Explicit Leaders on Human Crowd Motion* [Conference session]. Pedestrian and Evacuation Dynamics 2025, Prague, Czech.

Yoshida, K., Taylor, H., & Warren, W.H. (2024, December 4). *The Influence of Explicit and Covert Leaders on Human Crowd Motion* [Conference session]. Traffic and Granular Flow 2024, Lyon, France.

Yoshida, K., Taylor, H., & Warren, W. H. (2024). Can covert and explicit "leaders" steer and split real human crowds? *Journal of Vision, 24*(10), 1325–1325. https://doi.org/10.1167/jov.24.10.1325 (Poster presented for the Annual Meeting of the Vision Science Society, 2024, in St. Pete Beach, FL, USA).

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, Netherlands.

Yoshida, K., & Chihak, B. (2020, November 21). *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, November 15). *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.

Yoshida, K., Shrestha, A., & Chihak, B. (2018, November 10). *How roadway design affects cyclist-motorist interactions* [Poster presentation]. 2018 Tri-State Undergraduate Psychology Conference, Loras College, Dubuque, IA, USA.

SKILLS

Programming & Software

Languages:	Python, MATLAB, Julia, C++, C#, Bash, SQL, HTML/CSS, C, JavaScript
Scientific & Data Software:	VS Code, Visual Studio, Jupyter Notebooks, SPSS Statistics Software, Paraview, RStudio
Operating Systems:	macOS, Windows, Linux
Game Engines:	Unity
Version Control:	Git, GitHub

Tools & Equipment

Virtual Reality	HTC Vive, Vive Controllers, SteamVR
Unmanned Aircraft Systems (UAS):	DJI Mavic 3 Pro (FAA Part 107 Certified)

Languages

Proficient in English & Japanese

SCHOLARSHIP, AWARDS, & HONORS

2023-Present	Open Graduate Education Program, Brown University (two academic years of fellowship funding; equivalent to $228,345.50)
2025	The Peter D. Eimas Graduate Research Award ($1,000) Department of Cognitive and Psychological Sciences, Brown University
2020-2021	Kenneth R. and Pamela L. Galner Graduate Fellowship, Brown University (one academic year of fellowship funding; equivalent to $91,241)
2020	Richard H. Bahwell Prize in Psychology ($1,000), Coe College
2020	Phi Beta Kappa, National honor society
2018	Psi Chi, International honor society in Psychology

Other Honors & Membership

Scientific Societies: Vision Science Society (2021-Present), Psychonomic Society (2019-2021)
Honor Societies: Coe College Strata (2019), Mortar Board (2019), Alpha Lambda Delta (2017)

RELEVANT COURSES

Brown University (2020-Present)

Cognitive Science	Core Concepts in Cognitive and Psychological Sciences I & II, Perception and Action, Perceiving and Acting in 3D
Computer Science & Quantitative Courses	Data Science, Interdisciplinary Scientific Visualization, Computer Vision, Deep Learning, Statistical Inference, Human-Computer Interaction Seminar, Computer Systems, Applied Regression Analysis, Information Theory

Coe College (2016-2020)

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

SERVICE ROLES

2020-Present	Diversity and Inclusion Action Plan (DIAP) Committee Member Hiring and Recruitment Subcommittee Chair (2024-2025), Department of Cognitive and Psychological Sciences, Brown University
2023-2024	International Graduate Peer Mentor, Brown University
2021-2022	Graduate Student Representative, Department of Cognitive and Psychological Sciences, Brown University
2021, 2024	International Student Orientation Mentor, Brown University
2016-2020	International Club Executive Board (President, Vice President, Secretary), Coe College
2018-2020	Diversity Inclusion Collaboration Team, Coe College
2017	International Students Orientation Leader, Coe College

PROFESSIONAL REFERENCES

Dr. William H. Warren (Ph.D. Research Advisor)
Chancellor's Professor of Cognitive and Psychological Sciences, Brown University
Email: William_Warren_Jr@brown.edu

Dr. Mario di Bernardo (Collaborator & Ph.D. Dissertation Committee Member)
Professor of Automatic Control, University of Naples Federico II
Director of the Ph.D. Program in Modeling and Engineering Risk and Complexity, Scuola Superiore Meridionale (SSM)
Email: mario.dibernardo@unina.it

Dr. Sina Feldmann (Ph.D. Research Collaborator & Mentor)
Postdoctoral Researcher, Department of Cognitive and Psychological Sciences, Brown University
Email: sina_feldmann@brown.edu

Dr. Benjamin Chihak (Undergraduate Research Advisor)
Assistant Professor of Psychology, Coe College
Email: bchihak@coe.edu