

XIAOLU BAI

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RESEARCH INTEREST

A major focus of my research is to improve human performance, safety, and well-being through the application of human factors and cognitive psychology to the design and evaluation of systems.

EDUCATION

North Carolina State University, Raleigh, NC *Expected May 2024*
Ph.D. in Human Factors and Applied Cognition

California State University, Long Beach, CA August 2020
M.S. in Psychology, Option in Human Factors

Master's Thesis:

Online Learning: Does Integrated Video Lecture Help You Learn More Efficiently?

Purdue University, West Lafayette, IN May 2018
B.S. in Psychological Science & Applied Statistics

EXPERIENCES

Applied Cognitive Psychology Lab, Raleigh, NC
Graduate Research Assistant August 2020 - present

Lead ongoing research to discover strategies to keep drivers in the loop during partially automated driving, including experimental design, data collection, data analysis, and writing up the results.

Collaborate in a systematic review on cognitive measures in walking tasks. Standardize research protocol on testing human-prosthesis interaction. Understand preference and tuning on the intelligent lower-limb prosthesis.

Center of Usability and Accessibility in Design, Long Beach, CA
Lab Manager August 2019 - May 2020

Managed scheduling and resource allocation of the laboratory. Designed semester-long training plans and mentored students on accessibility evaluation.

Graduate Research Assistant August 2018 - July 2019

Evaluated standards for online courses on Blackboard to improve course usability and functionality. Evaluated e-textbooks' accessibility based on Web Content Accessibility Guidelines (WCAG) 2.0 for the California Open Online Library.

Perception and Action Lab, Long Beach, CA
Graduate Research Assistant February 2019 - May 2020

Developed a driving simulator with car physics, data collection function, and traffic system using Unity3D and C#. Compared take-over performance on level 3 automation with level 0 automation when encountering obstacles in virtual reality environment.

Usability Testing on Medical Device, Long Beach, CA

Graduate Research Assistant

October 2019 - May 2020

Conducted heuristics analyses on touch screen and eye-tracking functions of the Environmental Control Unit (ECU) device at Veterans Administration Hospital.

PUBLICATIONS

- **Bai, X.**, Yuan, J., Liu, M., Huang, H., & Feng, J. (2023). *Human Factors Considerations of Interaction between Wearers and Intelligent Lower-Limb Prostheses: A Prospective Discussion* [manuscript submitted for publication].
- **Bai, X.**, & Feng, J (2023). *Unlocking Safer Driving: How Answering Questions Help Takovers in Partially Automated Driving* [To be published in the Proceedings of the Human Factors and Ergonomics Society Annual Meeting].
- Yuan, J., **Bai, X.**, Alili, A., Liu, M., Feng, J., & Huang, H. (2023). *Finding a Natural Fit: A Thematic Analysis of Amputees' Prosthesis Setting Preferences during User-Guided Auto-Tuning* [To be published in the Proceedings of the Human Factors and Ergonomics Society Annual Meeting].
- **Bai, X.**, & Vu, K. P. L. (2023). Online Learning: Does Integrated Video Lecture Help You Learn More Efficiently?. In *Human-Automation Interaction. Automation, Collaboration, & E-Services* (pp. 531-548). Springer, Cham.
- Yuan, J. **Bai, X.**, Alili, A., Liu, M., Huang, H., & Feng, J. (2022). Understanding the Preferences for Lower-Limb Prosthesis Auto-Tuning Settings: A Think-Aloud Study. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting (Vol. 66, No. 1, pp. 2159-2163)* Sage CA: Los Angeles, CA: SAGE Publications.
- Yuan, J., **Bai, X.**, Driscoll, B., Liu, M., Huang, H., & Feng, J. (2022). Standing and Walking Attention Visual Field (SWAVF) task: a new method to assess visuospatial attention during walking. *Applied ergonomics*, 104, 103804.
- Hancock, G.M., Anvari, S.S., Nare, M.T., Mok, N.B., Ayvazyan, A., McCoy, K.M., **Bai, X.**, Mather, G.P., McBride, A.S., & Morales, N. (2020). Environmental control units for inpatient care at Veterans Affairs spinal cord injury centers: Heuristic evaluation and design recommendations. In: S. Yamamoto & H. Mori (Eds.), *Interface and the Management of Information: Proceedings of the 22nd International Conference of Human-Computer Interaction*. (pp. 23 - 38). Cham, Switzerland: Springer.

PRESENTATIONS

- Yuan, J., Driscoll, B., Alili, A., Liu, M., **Bai, X.**, Huang, H., & Feng, J. (2023). The validation of standing and walking attention visual field (SWAVF) task. Poster given at *APA Convention 2023*, Washington, DC.
- Chomppff, R.M.E., McCoy, K.M., Park, J., **Bai, X.**, & Miles, J.D. (2019, November). Evaluation of autonomous vehicles and smart technologies for their impact on traffic safety and traffic congestion. Poster given at *the 4th CSULB Graduate Research Conference*, Long Beach, CA.
- Torr, A, **Bai, X.**, & Vu, K.-P.L. (2019, March). Blackboard course design for Skill-Common website. Poster given at *the 14th Annual CSULB HFES Student Chapter Conference*, Long Beach, CA.

- **Bai, X.**, Proctor, R.W., & Dunston, P.S. (2018, April). Simulated construction equipment training with internal focus attention and external focus attention. Poster given at *the annual Purdue Psychology Undergraduate Research Conference*, West Lafayette, IN.
- **Bai, X.**, & Gray, C.M. (2016, April). Towards consolidating the UX knowledge. Poster given at *the annual Purdue Undergraduate Research Conference*, West Lafayette, IN.

TEACHING

Human Factors Psychology <i>Primary Instructor</i>	North Carolina State University Fall 2022 - Present
Cognitive Processes <i>Primary Instructor</i>	North Carolina State University Summer 2023
Biological Psychology <i>Graduate Teaching Assistant</i>	North Carolina State University Fall 2020 - Spring 2022
Introductory Statistics in Psychology <i>Graduate Teaching Assistant</i>	California State University, Long Beach Fall 2018

HONORS & AWARDS

University Graduate Fellowships from NC State University	2020 - 2021
Office of Undergraduate Research Scholar from Purdue University	2018
Discovery Park Undergraduate Research Fellowship from Purdue University	2016

PROFESSIONAL AFFILIATIONS

Human Factors and Ergonomics Society (HFES) member	2017 - Present
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SERVICES

HFES student chapter at NC state <i>Treasurer</i>	Fall 2021 - Spring 2022
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