

# YUE LUO

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## RESEARCH INTERESTS

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Ergonomics & human factors, injury prevention, rehabilitation, aging health, digital human modeling, wearable technology, data analytics, occupational safety, inclusive design, human motion analysis

## EDUCATION

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### University of Florida (UFL), Gainesville, FL

Ph.D., Industrial and Systems Engineering

December 2022

• Advisor: Dr. Boyi Hu

(Expected)

### University of Michigan (UMICH), Ann Arbor, MI

M.S., Industrial and Operations Engineering

April 2019

• Advisor: Dr. Clive D'Souza

M.S., Biomedical Engineering

April 2017

### Beijing Normal University, Zhuhai, Guangdong, China

B.S., Biotechnology

July 2015

## PEER-REVIEWED PUBLICATIONS

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### Journal Articles

#### Published

1. **Luo, Y.**, Yang, F., Yerebakan, M. O., Zhang, J., & Hu, B. (2022). Load Carriage Modes and Limb Crossing Patterns Altered Gait during Obstacle Negotiation. *Journal of Motor Behavior*. <https://doi.org/10.1080/00222895.2021.2017837>
2. Yerebakan, M. O., Li, S., **Luo, Y.**, Amaba, B., Swope, B., & Hu, B. (2022). The effect of different occupational background noises on voice recognition accuracy. *Journal of Computing and Information Science in Engineering*. <https://doi.org/10.1115/1.4053521>
3. **Luo, Y.**, Lu, X., Ahrentzen, S., & Hu, B. (2021). Impact of destination-based visual cues on gait characteristics among adults over 75 years old: A pilot study. *Gait & Posture*, 87, 110-116. <https://doi.org/10.1016/j.gaitpost.2021.04.030>
4. Lu, X., **Luo, Y.**, Hu, B., Park, N. K., & Ahrentzen, S. (2021). Testing of path-based visual cues on patterned carpet to assist older adults' gait in a continuing care retirement community. *Experimental Gerontology*, 111307. <https://doi.org/10.1016/j.exger.2021.111307>
5. **Luo, Y.**, Coppola, S. M., Dixon, P. C., Li, S., Dennerlein, J. T., & Hu, B. (2020). A database of human gait performance on irregular and uneven surfaces collected by wearable sensors. *Scientific data*, 7(1), 1-9. <https://doi.org/10.1038/s41597-020-0563-y>

#### Under Review

1. **Luo, Y.**, Grimaldi, N. S. \*, Zheng, H., Giang, W. C., & Hu, B. (under review). Distraction from Smartphone Changed Pedestrians' Walking Behaviors in Open Areas.
2. Chen, Y., **Luo, Y.**, & Hu, B. (under review). Towards Next Generation Cleaning Tools: Factors Affecting Cleaning Robot Usage and its Proxemic Behaviors Design.

3. Chen, Y., **Luo, Y.**, Yang, C., Yerebakan, M. O., Hao S., Grimaldi, N. S. \*, Li, S., Hayes, R., & Hu, B. (under review). Human Mobile Robot Interaction with Rich Contextual Information.

#### In Preparation

1. **Luo, Y.**, Lu, X., Ahrentzen, S., & Hu, B. High fear of falling and more visible targets changed the joint kinematic of older adults. (In progress).
2. Grimaldi, N. S. \*, **Luo, Y.**, Lu, X., Ahrentzen, S., & Hu, B. Effects of The Re-Envisioned Bedroom and Kitchen Layout Design on Human Motion: A Case Study. (In progress).
3. Lim, S., Lee, J., **Luo, Y.**, & D'Souza, C. Task Performance and Stepping Adaptation during Obstacle Clearance Task in Individuals with High Body Mass Index. (In progress).
4. Lu, X., **Luo, Y.**, Hu, B., Ahrentzen, S., & Xu, J. A field experiment: understanding older adults' nightlights usage patterns and exploring their evaluations to a proposed destination-based nightlight intervention in the residential settings. (In progress).

#### **Conference Proceedings**

1. **Luo, Y.**, Lu, X., Grimaldi, N. S. \*, Ahrentzen, S., & Hu, B. (2021). Effects of Light Conditions and Falls Concerns on Older Adults' Gait Characteristics: A Preliminary Study. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 65, No. 1, pp. 1332–1336). Sage CA: Los Angeles, CA: SAGE Publications. <https://doi.org/10.1177/1071181321651082>  
- Won "Arnold Small Award"
2. **Luo, Y.**, Zheng, H., Chen, Y., Giang, W. C., & Hu, B. (2020). Influences of Smartphone Operation on Gait and Posture During Outdoor Walking Task. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 1723-1727). Sage CA: Los Angeles, CA: SAGE Publications. <https://doi.org/10.1177/1071181320641418>
3. **Luo, Y.**, Ouyang, S. \*, Lockwood, C. \*, Ferraz, M. D. \*, & Hu, B. (2020). Publicly Accessible Wearable Motion Databases for Human Gait Studies. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 1718-1722). Sage CA: Los Angeles, CA: SAGE Publications. <https://doi.org/10.1177/1071181320641417>
4. Zheng, H., **Luo, Y.**, Hu, B., & Giang, W. C. (2020). A comparison of workload demands imposed by different types of distracted walking tasks and its effect on gait. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 64, No. 1, pp. 1713-1717). Sage CA: Los Angeles, CA: SAGE Publications. <https://doi.org/10.1177/1071181320641416>
5. Lim, S., **Luo, Y.**, Ebert, S., Jones, M. L., Varban, O., & D'Souza, C. (2018). Preliminary Study of Obstacle Clearance and Compensatory Movements in Individuals with High Body Mass Index. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 62, No. 1, pp. 388-392). Sage CA: Los Angeles, CA: SAGE Publications. <https://doi.org/10.1177/1541931218621089>

#### **PRESENTATIONS**

##### **Conference Presentations**

1. **Luo, Y.**, Lu, X., Grimaldi, N. S. \*, Ahrentzen, S., & Hu, B. (2021). Effects of Light Conditions and Falls Concerns on Older Adults' Gait Characteristics. Presented at the *65th Annual Meeting of the Human Factors and Ergonomics Society (HFES). Virtual Event*.
2. **Luo, Y.**, Zheng, H., Chen, Y., Giang, W. C., & Hu, B. (2020). Influences of Smartphone Operation on Gait and Posture During Outdoor Walking Task. Presented at the *64th Annual Meeting of the Human Factors and Ergonomics Society (HFES). Virtual Event*.
3. **Luo, Y.**, Ouyang, S. \*, Lockwood, C. \*, Ferraz, M. D. \*, & Hu, B. (2020). Publicly Accessible Wearable

Motion Databases for Human Gait Studies. Presented at the *64th Annual Meeting of the Human Factors and Ergonomics Society (HFES)*. Virtual Event.

### Poster Presentations

1. **Luo, Y.**, Chen, Y., Zheng, H., Giang, W. C., & Hu, B. (2021). Distraction and student safety: college pedestrians' walking strategies altered when interacting with smartphones. Poster presented at the *5th Annual Graduate Research Symposium*, University of Florida, Gainesville, FL.
2. Grimaldi, N. S. \*, **Luo, Y.**, Lu, X., Ahrentzen, S., & Hu, B. (2021). Effects of Light Conditions and Falls Concerns on Older Adults' Gait Characteristics. Poster presented at the *2021 Fall Undergraduate Research Symposium*, University of Florida, Gainesville, FL.
3. **Luo, Y.** & Hu, B. (2021). The Role of Phone Use on Pedestrian Safety: How Reading, Texting, and Gaming Affect Walking Behaviors. Poster presented at the *4th Annual Southeast Regional Research Symposium (SERRS)*, Virtual Event.
4. **Luo, Y.**, Zheng, H., Chen, Y., Giang, W. C., & Hu, B. (2020). Effects of Smartphone Operation on Pedestrians' Gait Performance: An Outdoor Study. Poster presented at the *44th Annual Meeting of the American Society of Biomechanics (ASB)*, Virtual Event.
5. **Luo, Y.**, Lim, S., Futerman, S., Grider, J., Ebert, S., Jones, M., Varban, O., & D'Souza, C. (2018). Dynamic Balance and Measures of Obstacle Clearance Performance in Individuals with High Body Mass Index. Poster presented at the *Education and Research Center (ERC) Regional Research Symposium*, the University of Illinois at Chicago, Chicago, IL.
6. Lim, S., Ebert, S., Malik, L., **Luo, Y.**, Futerman, S., Lin, S., D'Souza, C., Jones, M., & Varban, O. (2017). Novel Methods to Track Changes in Health and Function of Individuals with High Body Mass Index (BMI). Poster presented at the *MCubed Symposium 2017*, University of Michigan, Ann Arbor, MI.

### Invited Presentations

1. Lu, X., **Luo, Y.**, Hu, B., & Ahrentzen, S. (2021). The Effect of Path-Based and Destination-Based Visual Cues on Residents' Gait Characteristics. Presented at Oak Hammock Retirement Community at the University of Florida, Gainesville, FL, May 2021.

\* Student authors

### HONORS AND AWARDS

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- UFL Certificates of Outstanding Achievement	2021
- HFES ATG Arnold Small Award	2021
- HFES Council of Technical Groups Travel Award for First Year Graduate Students	2020
- UM Rackham Graduate School Travel Grant Award	2018
- Second Prize Scholarship of College of Engineering Technology (10%)	2014
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- Internal Auditor Qualification Certificate	2013
- Grand Prize Professional Scholarship of Beijing Normal University, Zhuhai (5%)	2012
- Excellent Leader of Liyun Youth Volunteers Association, College of Engineering branch	2011

### RESEARCH AND WORK EXPERIENCE

#### University of Florida (UFL), Gainesville, FL

Human-Systems Engineering Laboratory

August 2019 - Present

Graduate Research Assistant

- Faculty Advisor: Boyi Hu, Ph.D.
- Project: "Project Re-envision VR Simulation Testing"

- Project: “Exploring the Effects of Innovative Lighting Interventions on Older Adults’ Movement Behaviors and Reducing Fear of Falling”
- Project: “Influences of Smartphones and Smartwatches on Pedestrians’ Balance Control”
- Project: “Effects of Autonomous Mobile Robots on Human Co-workers' Satisfaction and Performance in Grocery Stores”
- Project: “Risk Prediction Modeling for 90-Day Readmissions Following Primary Total Hip (THA) and Total Knee Arthroplasty (TKA) Hospitalization”

**University of Michigan (UMICH), Ann Arbor, MI**

Inclusive Mobility Research Laboratory

April 2017 - May 2019

Graduate Student Research Assistant

- Faculty Advisor: Clive D'Souza, Ph.D.
- Project: “Novel Methods to Track Changes in Health and Function, Before and After Adult Bariatric Surgery” (Funding: MCubed program from University of Michigan)
- Project: “HUMOSIM Force-Based Posturing in Manual Assembly Work”
- Project: “Sensor Based Postural Demand Profiles for Cumulative Physical Workload Estimation”
- Project: “Instrumentation for Measuring Supine Spine Rotations”

**University of Michigan (UMICH), Ann Arbor, MI**

Yali Dou’s Laboratory

September 2016 - April 2017

Graduate Student Research Assistant

- Faculty Advisor: Yali Dou, Ph.D.
- Project: “Identification of Non-Histone Substrates of Mixed-lineage Leukemia Protein-1 (MLL1)”

**Jiangxi Institute of Materia Medica, Nanchang, China**

Research Intern

September 2014 - October 2014

- Faculty Advisor: Junming Zhang
- Project: “Evaluation of the Effects of Dalitong Granule (Medicine) to Isolated Intestine of Guinea Pigs”

**Zhejiang University, Hangzhou, China**

Enyin Lai’s Laboratory

July 2014 - August 2014

Undergraduate Student Research Assistant

- Faculty Advisor: Enyin Lai, Ph.D.
- Project: “The Establishment of Renal Ischemia Reperfusion Injury Model”

**TEACHING EXPERIENCE**

**Graduate Teaching Assistant**

January 2022

*University of Florida, Department of Industrial and Systems Engineering*

ESI 3215C: Data Analysis for Industrial Applications

**Guest Lecturer**

November 2021

*University of Florida, Department of Industrial and Systems Engineering*

EIN 6905: Occupational Safety Engineering

**Guest Lecturer**

May 2020

*Abraham Lincoln Middle School*

Outreach Event: Ants and Robots

**Guest Lecturer**

October 2019

*University of Florida, Department of Industrial and Systems Engineering*

EIN4360C: Facilities Planning and Work Design

**Module Instructor**

March 2018 &amp; 2019

*University of Michigan, Department of Industrial and Operations Engineering*

IOE 591: Ergonomics Research Methods Laboratory

**MENTORING EXPERIENCE**

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**University of Florida (UFL), Gainesville, FL**

Watts, Grace, ME, Undergraduate Student Research Assistant (10/2021 - present)

Grimaldi, Nicolas S, BME, Undergraduate Student Research Assistant (8/2020 - present)

Lockwood, Caroline G, ISE, Undergraduate Student Research Assistant (8/2019 - 12/2020)

Ouyang, Sai, ISE, Graduate Student Research Assistant (8/2019 - 06/2020)

Ferraz, Maria D, ISE, Undergraduate Student Research Assistant (8/2019 - 05/2020)

**University of Michigan (UMICH), Ann Arbor, MI**

Keeley, Jordan, IOE, Undergraduate Student Research Assistant (2/2018 - 4/2019)

Futerman, Sidnie, IOE, Undergraduate Student Research Assistant (9/2017 - 4/2018)

**PROFESSIONAL DEVELOPMENT**

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**Responsible Conduct of Research Certificate**

August 2020

*University of Florida (UFL), Gainesville, FL*

Selected to attend a 3-month seminar to gain an understanding of the responsible conduct of research.

**PROFESSIONAL AFFILIATION AND LEADERSHIP**

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| - Member, Human Factors and Ergonomics Society (HFES)              | 2018 - Present |
| - Member, Institute of Electrical and Electronics Engineers (IEEE) | 2020 - Present |
| - Newsletter editor, HFES Aging Technical Groups                   | 2021 - 2022    |

**PROFESSIONAL SERVICE**

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| - Reviewer, IEEE Transactions on Human-Machine Systems   | 2020 - Present |
| - Reviewer, IEEE International Conference on Systems, Man, and Cybernetics                                 | 2021           |
| - Reviewer, Proceedings of the 65 <sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society | 2021           |
| - Reviewer, Proceedings of the 64 <sup>th</sup> Annual Meeting of the Human Factors and Ergonomics Society | 2020           |
| - Student Volunteer, HFES Annual Meeting   | 2021           |

**PROFESSIONAL SKILLS**

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- Programming Language: Python, R
- Operating System: Windows, Mac, Ubuntu
- Software: MATLAB, SPSS, Minitab, R studio, LabVIEW, Gazebo, 3DSSPP
- Equipment: Motion capture system (Xsens, Biostamp, APDM, Vicon, Qualisys)
  - Electromyography system (Delsys)
  - Force plates (ATMI)
  - Robot system (Fetch Freight base)
- Language: Chinese (Mandarin), English