Mustafa Ozkan Yerebakan

PhD, AHFP

Staff Consultant

Dr. Mustafa Ozkan Yerebakan is a Staff Consultant with Engineering Systems Inc. (ESi) specializing in human factors, ergonomics, occupational safety, and human performance. His work focuses on evaluating how people interact with products, equipment, technology, and work environments, and how those interactions influence safety, usability, workload, and task performance. He has experience applying human factors and ergonomic principles to the evaluation of products, workplace activities, and physical environments., including workplace evaluations, site inspections, slip-resistance testing, and the assessment of warnings, instructions, and manual material handling tasks.

Dr. Yerebakan earned his Ph.D. in Industrial and Systems Engineering from the University of Florida with a specialization in Human Systems Engineering. His research examined human interaction with emerging technologies, including collaborative robotics and unmanned aerial systems, with a focus on mental workload, biomechanics, movement patterns, and user acceptance. He has designed and conducted human-subject studies, published in peer-reviewed journals, and presented at professional conferences on human factors, ergonomics, and human-technology interaction.

Education

PhD, Industrial and Systems Engineering. University of Florida. 2024

MS, Industrial and Systems Engineering. University of Florida. 2020

BSE, Industrial and Operations Engineering. University of Michigan. 2018

Licenses & Certifications

- FAA Licensed UAS Pilot #4466121
- BCPE Certified Associate Human Factors Professional #2701
- Certified XL Tribometrist #2503071
- HFE for Medical Technology, Emergo by UL #2024174E09

Contact Information

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ESi Miami

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Miami, FL 33166

Areas of Specialization

- Human Factors
- Slip, Trips and Falls

- 30-Hour OSHA Outreach for General Industry, University of South Florida, # USWS15318891
- FARO Focus Scanner User Certification, Aurora, IL
- Walkway Auditor Certificate Holder, National Floor Safety Institute #302

Languages

- English, Fluent.
- Turkish, Native.

Positions Held

Engineering Systems Inc., Miami, Florida

- Staff Consultant, 2026 – Present

Rimkus Consulting Group, Altamonte Springs, Florida

- Human Factors Consultant, 2024 – 2025

University of Florida, Gainesville, Florida

- Graduate Research Assistant - Human Systems Engineering Lab, 2020 – 2024

Professional Affiliations/Honors

Human Factor and Ergonomics Society (HFES)

- Early Career Member

Tau Beta Pi Honor Society

- Member

Alpha Pi Mu Honor Society

- Member

Project Experience

Investigations

Occupational Ergonomics

- Utilized tools such as the Revised NIOSH Lifting Equation and 3DSSPP to evaluate and scrutinize opposing expert reports for a large e-commerce company.
- For the same project, motion capture equipment such as the XSens IMU system to collect data on worker movements and kinematics for different tasks.

Premises Liability

- Conducted site inspections and slip testing evaluations using the English XL tribometer for more than 10 premises liability cases.
- Developed case summaries and reports via summarizing available documents such as depositions, police
- reports, and opposing experts, and conducting literature reviews to provide a basis for case opinions for over 25

Product Warnings

- Conducted benchmarking for product warnings for a range of consumer products and assisted in the development of warnings in user manuals.

Publications

"Evaluation of Biomechanical and Mental Workload During Human-Robot Collaborative Pollination Task," **Yerebakan, M. O.**, Gu, Y., Gross, J., and Hu, B. Human Factors, 67(2), 100-114, 2025.

"Human–robot collaboration in modern agriculture: A review of the current research landscape," **Yerebakan, M. O.**, and Hu, B. Advanced Intelligent Systems, 2300823, 2024.

"Wearable Sensors Assess the Effects of Human–Robot Collaboration in Simulated Pollination," **Yerebakan, M. O.**, and Hu, B., Sensors, 24(2), 577, 2024.

"IMU-based monitoring for assistive diagnosis and management of IoHT: A review," Bo, F., **Yerebakan, M. O.**, Dai, Y., Wang, W., Li, J., Hu, B., and Gao, S., In Healthcare (Vol. 10, No. 7, p. 1210), MDPI, June 2022.

"Human workload and ergonomics during human-robot collaborative electronic waste disassembly," Chen, Y., Luo, Y., **Yerebakan, M. O.**, Xia, S., Behdad, S., and Hu, B., In 2022 IEEE 3rd international conference on human-machine systems (ICHMS) (pp. 1-6). IEEE, November 2022.

"Human mobile robot interaction in the retail environment". Chen, Y., Luo, Y., Yang, C., **Yerebakan, M. O.**, Hao, S., Grimaldi, N., Li, S., Hayes. R., and Hu, B., Scientific Data, 9(1), 673, 2022.

"How Do Humans Adjust Their Motion Patterns in Mobile Robots Populated Retail Environments?," Luo, Y., Chen, Y., **Yerebakan, M. O.**, Hao, S., Grimaldi, N., Yang, C., Hayes, R., and Hu, B., In 2022 IEEE 3rd International Conference on Human-Machine Systems (ICHMS) (pp. 1-6). IEEE, November 2022.

"Load Carriage Modes and Limb Crossing Patterns Altered Gait during Obstacle Negotiation," Luo, Y., Yang, F., **Yerebakan, M. O**., Zhang, J., and Hu, B., Journal of Motor Behavior, 54(5), 525-536, 2022.

"Evaluating the impact of writing surface and configuration on muscle activation level during a handwriting task: An exploratory study," **Yerebakan, M. O.**, Hu, B., Barbir, A., Lin, M. Y., and Dennerlein, J. T., Work, 71(4), 1183-1191, 2022.

"Human-centered drone led illumination system: A proof-of-concept prototype," Hao, S., **Yerebakan, M. O.**, and Hu, B., In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (Vol. 65, No. 1, pp. 1480-1484). Sage CA: Los Angeles, CA: SAGE Publications, September 2021.

“Effect of illumination on human drone interaction tasks: An exploratory study,” **Yerebakan, M.O.**, Hao, S., Xu, K., Gheisari, M., Jeelani, I., and Hu, B., In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (Vol. 65, No. 1, pp. 1485-1489), Sage CA: Los Angeles, CA: SAGE Publications, Page 3, September 2021.

“Use of Wearable Sensors and Machine Learning Methods in Promoting Total Joint Replacement Treatment Outcomes: A Survey,” **Yerebakan, M. O.**, Zhong, X., Parvataneni, H. K., Gray, C. F., and Hu, B., In Proceedings of the Human Factors and Ergonomics Society Annual Meeting (Vol. 64, No. 1, pp. 627-631). Sage CA: Los Angeles, CA: SAGE Publications, December 2020.

Presentations

Manual Material Handling, EIN 4360 Facilities Planning and Material Handling, Fall 2025 Semester (Guest Lecture).

Ergonomics Assessment of a Human - Robot Collaborative Pollination Task, IISE Annual Conference & Expo 2023, New Orleans, LA (Lecture).

Factors that Affect Acceptance of Agricultural Related Robotic or Wearable Technology by Agricultural Stakeholders: A Pilot Survey, 2022 IEEE 3rd International Conference on Human Machine Systems (ICHMS), Orlando, FL (Lecture).

Effect of Illumination on Human Drone Interaction Tasks: An Exploratory Study.2021 65th Annual Meeting of HFES, Baltimore, MD (Lecture).

Use of Wearable Sensors and Machine Learning Methods in Promoting Total Joint Replacement Treatment Outcomes: A Survey. 2020 64th Annual Meeting of HFES, Chicago, IL (Lecture).