HANJUN PARK

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EDUCATION

Ph.D., Industrial and Systems Engineering *Aug 2025*
Virginia Tech, Blacksburg, VA
- Graduate Certificate in Data Analytics

M.S., Industrial Engineering *Aug 2014*
Seoul National University, Seoul, Korea

B.S., Industrial and Systems Engineering *Dec 2011*
Georgia Institute of Technology, Atlanta, GA

RESEARCH EXPERIENCE

Occupational Ergonomics and Biomechanics Laboratories *2019–2025*
Graduate Research Assistant
- Faculty Advisors: Maury A. Nussbaum & Divya Srinivasan

Life Enhancing Technology Laboratory *2012–2014*
Graduate Research Assistant
- Faculty Advisor: Woojin Park

PUBLICATIONS

Peer-Reviewed Journal Publications

[*J*.5] Ransing, V., Park, J., Ye, Y., **Park, H.,** Kim, S., Du, J., & Srinivasan, D. (2025). Efficacy of Virtual Reality-Based Approach for Users to Understand the Potential Benefits and Limitations of Using Exoskeletons. *Human Factors*, 00187208251346627.

[*J*.4] **Park, H.,** Noll, A., Kim, S., & Nussbaum, M.A. (2025). Passive arm-support and back-support exoskeletons have distinct phase-dependent effects on physical demands during cart pushing and pulling: An exploratory study. *Applied Ergonomics*, 126, 104510. doi:10.1016/j.apergo.2025.104510

[*J*.3] **Park, H.,** Kim, S., Nussbaum, M.A., & Srinivasan, D. (2023). A pilot study investigating motor adaptations when learning to walk with a whole-body powered exoskeleton. *Journal of Electromyography and Kinesiology*, 69, 102755. doi:10.1016/j.jelekin.2023.102755

[*J*.2] **Park, H.,** Kim, S., Nussbaum, M.A., & Srinivasan, D. (2022). Effects of using a whole-body powered exoskeleton during simulated occupational load-handling tasks: A pilot study. *Applied Ergonomics*, 98, 103589. doi:10.1016/j.apergo.2021.103589

[*J*.1] **Park, H.,** Park, W., & Kim, Y. (2014). Manikin families representing obese airline passengers in the U.S. *Journal of Healthcare Engineering*, 5, 479-504. doi:10.1260/2040-2295.5.4.479

Journal Publications in Progress

- **Park, H.,** Kim, S., Nussbaum, M.A., & Srinivasan, D. Exploring motor adaptation to a whole-body powered exoskeleton use during stationary load handling tasks. *To be submitted to Annals of Biomedical Engineering.*
- **Park, H.,** & Nussbaum, M.A. Quantify the effects of using different arm-support exoskeletons on muscle synergies during overhead tasks. *To be submitted to the Journal of Biomechanics.*

Peer-Reviewed Conference Proceedings (* presenter)

[*C*.9] **Park, H.*,** Ojelade A., Kim, S., & Nussbaum, M.A. (2024). Effects of using arm-support exoskeletons on muscle coordination during a pseudo-static overhead task: preliminary analysis of muscle synergy. Human Factors and Ergonomics Society Annual Meeting, 65. **- Won Best Experimental Paper Award at the Occupational Ergonomics Technical Group**

[*C*.8] **Park, H.*,** Noll, A., Kim, S., & Nussbaum, M.A. (2023). Effects of using passive back- and arm-support exoskeletons for cart pushing and pulling. Proceedings of the Human Factors and Ergonomics Society Annual Meeting. doi:10.1177/216950672311925

[*C*.7] Noll, A.*, Nussbaum, M.A., Kim, S., & **Park, H.** (2023). Reliability Analysis of Task Performance and Subjective Measures for Assessment of Occupational Exoskeletons. Proceedings of the Human Factors and Ergonomics Society Annual Meeting. doi:10.1177/2169506723119241

[*C*.6] **Park, H.*,** Kim, S., Nussbaum, M.A., & Srinivasan, D. (2022). Changes in kinematics and muscle activity when learning to use a whole-body powered exoskeleton for stationary load handling. Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 66(1), 273–274. doi:10.1177/1071181322661218

[*C*.5] **Park, H.*,** Lee, Y., Kim, S., Nussbaum, M.A., & Srinivasan, D. (2021). Gait kinematics when learning to use a whole-body powered exoskeleton. Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 65(1), 1367–1368. doi:10.1177/1071181321651158

[*C*.4] **Park, H.*,** Kim, S., Lawton, W., Nussbaum, M.A., & Srinivasan, D. (2020). Effects of using a whole-body powered exoskeleton on physical demands during manual handling. Proceedings of the Human Factors and Ergonomics Society Annual Meeting, 64(1), 888–889. **- Won Best Student Paper Award at the Occupational Ergonomics Technical Group** doi:10.1177/1071181320641211

[*C*.3] Jung, J., **Park, H.*,** Hwang, D., Son, M., Beck, D., Park, J., & Park, W. (2014). A review on interaction techniques in virtual environments. In Proceedings of the 2014 International

Conference on Industrial Engineering and Operations Management (pp. 1582-1590).

[*C*.2] Beck, D.*, Hwang, D., Son, M., Jung, J., **Park, H.,** Park, J., & Park, W. (2013). A Review on Techniques for Evaluating Physical Stresses Associated with the Use of Various Input Devices. Proceedings of 2013 Fall Conference of Ergonomics Society of Korea (ESK), Jeju, Korea.

[*C*.1] Jung, J.*, **Park, H.,** Hwang, D., Son, M., Beck, D., Park, J., & Park, W. (2013). A Review on Object Manipulation Techniques in Virtual Environments and their Performance Metrics. Proceedings of 2013 Fall Conference of Ergonomics Society of Korea (ESK), Jeju, Korea.

HONORS AND AWARDS

- Best Experimental Paper Award, OETG at HFES *2024*
- IISE Future Faculty Fellow (3F) Program Awardee *2023–2024*
- NIOSH Training Fellow, Virginia Tech *2023–Present*
  - Fellowship includes monthly stipend, tuition, and required fees
- ISE Graduate Travel Award ($900), Virginia Tech *2022*
- Best Student Paper Award, OETG at HFES *2020*
- VT HFES Student Chapter Research Competition Award *2020*
- Grado Department of ISE Fellowship, Virginia Tech *2018*
  - Fellowship includes monthly stipend, tuition, and required fees
- Brain Korea 21 Scholarship, Seoul National University *2014*
- Lecture & Research Scholarship, Seoul National University *2013*

PRESENTATIONS

Poster Presentation (* presenter)

[*P*.2] **Park, H.*,** Kim, S., Nussbaum, M. A., & Srinivasan, D. (2020). Effects of using a whole-body powered exoskeleton on physical demands during manual material handling. Presented at the 2020 Annual HFES/INFORMS Poster Competition, Virginia Tech, VA, October 2020 **- Won Student Poster Presentation Award**

[*P*.1] **Park, H.*,** Ojelade, A., Kim, S., & Nussbaum, M. A. (2023). Effects of different arm-support exoskeletons on muscle activation patterns during a pseudo-static overhead task - preliminary analysis of muscle synergy. Presented at the 37th American Society of Safety Professionals (ASSP) Region VI Professional Development Conference (PDC) in Myrtle Beach, South Carolina, September 2023 **- Won Student Presentation Award**

TEACHING EXPERIENCE

Instructor of Record

Virginia Tech, Department of Industrial and Systems Engineering

- ISE 4624: Work Physiology (n = 36) *Fall, 2023*
- ISE 3614: Human Factors Engineering and Ergonomics (taught online, n = 7) *Summer, 2023*

Guest Lecturer
Virginia Tech, Department of Industrial and Systems Engineering

- ISE 3624: Industrial Ergonomics *Spring, 2023*
  "NIOSH Lifting Equation and Controls"
  - Provided lectures over two sessions with class sizes over 60 and 100
- ISE 4644: Occupational Safety and Hazards Control *Fall, 2018*
  "Review on Hazard Analysis and Prevention"
  - Provided a lecture to a class of over 20 students

Graduate Teaching Assistant
Virginia Tech, Department of Industrial and Systems Engineering

- ISE 3624: Industrial Ergonomics *Spring, 2019*
- ISE 4624: Work Physiology *Spring, 2019*
- ISE 4644: Occupational Health and Hazards Control *Fall, 2018*

PROFESSIONAL EXPERIENCES

Software Engineer, *Military duty* *Oct 2014–Mar 2018*
Kornic Glory, Seoul, Korea

Research Intern *June 2011–Aug 2011*
LG Electronics, Seoul, Korea

SERVICE

Institutional Service

VT Chapter of the Human Factors and Ergonomics Society (HFES)
- Officer: *Webmaster* *2020–2022*

National Biomechanics Day
- *Led lab tours and biomechanics activities for local high school students* *2020–Present*

VT Center for the Enhancement of Engineering Diversity (CEED) TechGirls Summer Camp
- *Led hands-on biomechanics activities* *2019*

VT College of Engineering Alumni Outreach Event
- *Led lab tours for alumni* *2019*

Review Service

- Reviewer, *Ergonomics in Design* *2024–Present*
- Reviewer, *IISE Transactions on Occupational Ergonomics and Human Factors* *2023–Present*
- Reviewer, *Human Factors and Ergonomics Society Proceedings* *2021–Present*

PROFESSIONAL AFFILIATIONS

Member, Institute of Industrial and Systems Engineers *2023–Present*
Member, Human Factors and Ergonomics Society *2020–Present*
Steering Committee member, K-Human Factors and Ergonomics Society *2021–Present*

REMARK

Dual Citizenship: U.S.A. and Republic of Korea