

# Jungjoo (Jay) Lee

Assistant Professor  
Department of Environmental and Occupational Health  
School of Public Health  
Texas A&M University  
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## RESEARCH INTERESTS

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Jungjoo Lee, PhD, is an Assistant Professor in the Department of Environmental and Occupational Health in the School of Public Health at Texas A&M University, with expertise in Digital health and Data science. His research focuses on two main areas: geriatric health and behavioral health studies. First, he specializes in big data analysis in healthcare, investigating multilayered confounding structures in the transition from mild cognitive impairment to dementia. He employs innovative analytical methods such as deep neural network, random forest algorithm, continuous knowledge learning (CKL), train-attention augmented language model (TAALM), and mixed models to explore the mechanisms underlying cognitive decline. Second, he evaluates technology-assisted programs in behavioral healthcare by using wearable devices to monitor clients' biofeedback, including autonomic nervous system activity and sleep patterns, in order to detect early warning signals of dementia-related delusions and seizures within complex biometric data. Dr. Lee has published over 40 peer reviewed articles and secured research funding from academic institutions and healthcare agencies, serving as PI, Co-I, and research coordinator.

## ACADEMIC APPOINTMENT

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**Assistant Professor** 08/2025 – Current

Department of Environmental and Occupational Health

School of Public Health

Faculty, Center for Community Health and Aging, Texas A&M Health Science Center

Texas A&M University, College Station, TX

**Assistant Professor** 08/2023 – 05/2025

School of Health Professions, College of Nursing and Health Professions

University of Southern Mississippi, Hattiesburg, MS

## EDUCATION

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Doctor of Philosophy in Public Health 08/2019 – 08/2023

Indiana University, Bloomington, IN

Department of Health & Wellness Design, School of Public Health

Concentration: Preventive health services, Data science, Digital healthcare

Dissertation: Cognitively stimulating activities, emotional health, and cognitive functions among older adults with mild cognitive impairment: a longitudinal analysis.

Academic Minor: Quantitative Methodology (With a Focus on Longitudinal Analysis)

Yonsei University, Seoul, South Korea.

Department of Social Policy and Administration, College of Social Sciences

Concentration: Social policy, Health equity, Minority health

Thesis: Privatization of public sports facilities and management efficiency using a data envelopment analysis (DEA).

Bachelor of Arts in Sport Industry Studies

03/2009 – 02/2016

Yonsei University, Seoul, South Korea

Department of Physical Education, College of Educational Sciences

Concentration: Adapted physical activity, Rehabilitation science

## **REFEREED PUBLICATIONS**

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### **2025**

1. Kim, J., Kim, Y., **Lee, J.**, & Faisal, H. (Submitted in 01/2025) Virtual Reality Meditation: A pilot study on depression, emotion, and quality of life in older adults with dementia. *Aging and Health Research*.
2. **Lee, J.**, Kim, J., & Kim (In Revision). Differential changes in dementia risk based on types of health behaviors in older adults with mild cognitive impairment. *The Journals of Gerontology: Series B*.
3. **Lee, J.**, Han, A., & Kim, J. (In Revision) The longitudinal impact of self-perception on disability acceptance among people with intellectual and developmental disabilities: controlling for disability etiology and duration. *Current Psychology*.
4. **Lee, J.**, Han, A., Kim, J., & Kim, J. (In Revision). Longitudinal estimation of disability acceptance following healthy and unhealthy behaviors in individuals with lower extremity amputations: considering the duration and etiology of disability. *Archives of Physical Medicine and Rehabilitation*
5. **Lee, J.**, Kim, J., & Park, S. (In Revision). Dose-response relation between dementia risk and cognitive activities between nursing home and community residents. *Journal of Applied Gerontology*
6. Kim, J., **Lee, J.**, Kim, Y., Woo, B., & Ory, M. (2025). The longitudinal risk of Alzheimer's disease and related dementias following participation in cognitively stimulating activities by older adults. *Gerontology and Geriatric Medicine*.
7. **Lee, J.**, Kim, J., & Lee, K. (2025) Longitudinal estimation of adequate physical activity levels to reduce the risk of Alzheimer's disease and other dementias in older Adults with mild cognitive impairment. *Journal of Physical Activity and Health*.
8. **Lee, J.**, Park, S., & Kim, J. (2025) The role of community-based leisure activities in promoting disability acceptance among individuals with intellectual and developmental disabilities. *Journal of Intellectual and Developmental Disabilities*.
9. Kim, J., Kim, Y., **Lee, J.**, Welsh-Bohmer, K., & Ory, M. (2025) The impact of Jigsawdio program on cognitive and mental health of people living with dementia. *Gerontechnology*.

10. **Lee, J.,** & Kim, J. (2025) Applying virtual reality in mindfulness exercises for emotional regulation and mental health among inpatients with behavioral issues: A feasibility study. *American Journal of Health Promotion*.
11. **Lee, J.,** Kim, J., & Kim, J. (2025) Physical activity and disability acceptance considering the duration and etiology of disability in people with visual impairment: a longitudinal study. *Journal of Physical Activity and Health*.
12. Purcell, N., **Lee, J.,** & Ory, M. (2025) Integrating a care supporter in diabetes self-management education to enhance health outcomes: a pilot study. *The Science of Diabetes Self-Management and Care*. 10.1177/26350106251320327
13. Han, A., **Lee, J.,** & Kim, J. (2025). A longitudinal investigation of the impact of disability acceptance on the disability-related stress of individuals with intellectual and developmental disabilities. *American Journal of Intellectual and Developmental Disability*.

## 2024

14. Kim, J., **Lee, J.,** & Kim, J. (2024). The effect of levels of leisure-time physical activity on cognitive functions among older adults with mild cognitive impairment: A longitudinal analysis. *Gerontology and Geriatric Medicine*, 4(10). 10.1177/23337214241291705
15. Kim, J., **Lee, J.,** & Kim, J. (2024). The longitudinal estimation of disability-related stress by physical activity among Koreans with physical disabilities. *Stress and Health*, 41, e3519.
16. **Lee, J.,** Kim, J., & An, S. (2024). The risk of diabetes by changing memory, working memory, and processing speed among older adults. *Frontiers in Psychology*, 15. DOI: 10.3389/fpsyg.2024.1427139
17. **Lee, J.,** Kim, J., & Ory, M. (2024). The impact of immersive virtual reality meditation on the emotional regulation and mental health of individuals with major depressive disorder and generalized anxiety disorder. *Frontiers in Psychology*, 15. DOI: 10.3389/fpsyg.2024.1471269
18. **Lee, J.,** Kim, J., Woo, B., Pesola, A., & Tikkanen, O. (2024). The longitudinal relationship between levels of physical activity and positive and negative affect among older foreign-born adults with mild cognitive impairment. *Psychogeriatrics*. DOI: 10.1111/psyg.13114
19. **Lee, J.,** Kim, J., Woo, B., Ju, H., & An, S. (2024). A longitudinal dose-response curve between physical activity and the prevalence of diabetes in different levels of cognitive function among older adults. *American Journal of Alzheimer's Disease*, 39, 1-9, DOI: 10.1177/15333175241241891
20. **Lee, J.,** Kim, J., & Svetina, D. (2024). The longitudinal relationship between levels of cognitively stimulating activity and positive and negative affect among older adults with MCI. *Psychogeriatrics*, 24(2), 369-381.
21. Kim, J., **Lee, J.,** Kim, Y., Ory, M., & Welsh-Bohmer, K. (2024). Investigating the impact of immersive virtual reality meditation on coherence achievement score, anxiety, and depression among people with dementia. *Journal of Health and Social Science*, 9(1), 100-109.
22. **Lee, J.,** Kim, J., & Svetina, D. (2024). A longitudinal analysis of different levels of cognitively stimulating activity and cognitive function among older adults with MCI. *Journal of Cognitive Enhancement*, 8, 257-270.
23. Lee, C., Kim, J., **Lee, J.,** & Hu, D. (2024). Leisure involvement, COVID-19 risk perception, coping, and life satisfaction among Korean immigrants living in the United States. *American Journal of Health Behavior*, 48(2), 279-290.

24. **Lee, J.,** Lee, J., Kim, J., & Kim, Y. (2024). Investigating the relationship between types of health behavior and coping strategies for older Korean immigrants. *Journal of Health and Social Sciences*, 8(3), 209-218.
25. Stanojevic, C., Kim, Y., Allsop, J., Fecske, C., Piatt, J. A., Kim, J., Stanojevic, I. S., & **Lee, J.** (2024). Perspectives on clinical supervision: Recreational therapy and the need for rigorous clinical supervision. *American Journal of Recreation Therapy*, 23(3), 17–26.

## 2023

26. Kim, J., **Lee, J.,** Rodriguez, M., Han, A., & Ju, H. (2023). Identifying the relationships between types of leisure activities and cognitive functions for older adults. *American Journal of Health Behavior*, 47(3), 650-659.
27. Kim, J., Kim, Y., **Lee, J.,** & Ory, M. (2023). Efficacy of an immersive nature-based virtual reality program on depression, emotional health, and quality of life among care facility residents with Alzheimer's disease and its related dementias. *American Journal of Health Behavior*, 47(1), 3-12.
28. **Lee, J.,** Han, A., Kim, J., & Park, S. (2023). Relationships between types of health behaviors and mental health among older adults with diabetes during the COVID-19 pandemic. *American Journal of Health Behavior*, 47(2), 228-236.
29. Kim, J., Ko, M., **Lee, J.,** & Kim, Y. (2023). The effects of a mobile-based multi-domain intervention on cognitive function among older adults. *Preventive Medicine Report*, 32, 102165.
30. **Lee, J.,** Oh, S., Kim, J., & Kim, J. (2023). Different levels of leisure walking and mental health among older adults with mild cognitive impairment. *Journal of Aging and Physical Activity*, 31(5), 841-848.
31. Kim, J., **Lee, J.,** Nuseibeh, B., Kim, Y., & Han, S. (2023). The effects of a nature-based virtual reality program on emotional health and quality of life among older adults with dementia. *American Journal of Health Behavior*, 47(1), 3-12. (SSCI)

## 2022

32. **Lee, J.,** Kim, J., & Han, S. (2022). Different levels of physical activity, coping, and mental health among older adults with diabetes during the COVID-19. *American Journal of Health Behavior*, 46(2), 177-185.
33. Kim, Y., **Lee, J.,** Nuseibeh, Jung, M., & Kim, J. (2022). The utilization of nature-based virtual reality practice for the well-being of older adults with dementia. *Alzheimer's and Dementia*, 18 (8), e062801.
34. Kim, J., **Lee, J.,** Kim, Y. S., & Park, S. H. (2022). Identifying the relationship between leisure walking and prevalence of Alzheimer's disease and other dementias. *International Journal of Environmental Research and Public Health*, 19(13), 8076.
35. Kim, J., **Lee, J.,** Ko, M., & Oh, S. (2022). Leisure, mental health, and life satisfaction among older adults with mild cognitive Impairment. *American Journal of Health Behavior*, 46(4), 477-487.
36. Kim, H., Kim, J., **Lee, J.,** & Kim, J. (2022). Leisure types, coping, happiness, and life satisfaction among Veterans. *American Journal of Health Behavior*, 46(3), 209-217.

## 2021 and Earlier

37. **Lee, J.,** Kim, J., & Holden, R. (2021). Physical and mental health differences reported by three age groups of older adults with diabetes. *Gerontology and Geriatric Medicine*, 8. DOI: /10.1177/23337214211055897

38. **Lee, J.**, Kim, J., Chow, A., & Piatt, J. (2021). Different levels of physical activity, physical health, happiness, and depression among older adults with diabetes. *Gerontology and Geriatric Medicine*, 7. DOI: 10.1177/2333721421995623
39. Yang, J., Lee, H., & **Lee, J.** (2016). Life satisfaction and equality of opportunity in happiness among the elderly in Korea. *Social Science Review*, 47(2), 29-45.

## **FUNDING**

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### **RESEARCH GRANT PROPOSALS UNDER REVIEW:**

1. Virtual Reality Nature Trek (Scored)  
Efficacy of Immersive Nature-based Virtual Reality (INVR) intervention on the behavioral and mental health of older adults with AD/ADRD  
PI: Junhyoung Kim  
Funding Agency: National Institute on Aging (NIA, R01)  
Role: Research Coordinator
2. Mobile-based Multidomain Program (Silvia Apps) (Scored)  
The feasible study of a smartphone-based multidomain intervention for older adults with dementia  
PI: Junhyoung Kim  
Funding Agency: National Institute on Aging (NIA, R01)  
Role: Research Coordinator
3. Digital Jigsawdio Puzzle (Scored)  
Jigsawdio: An audiovisual jigsaw puzzle for people with Alzheimer's Disease and Alzheimer's-Disease-Related Dementias  
MPI: Junhyoung Kim, Marcia Ory, Kathleen Welsh-Bohmer, Amy Young  
Funding Agency: National Institute on Aging (NIA, SBIR Phase II)  
Role: Research Coordinator

### **RESEARCH GRANT PROPOSALS IN PROGRESS:**

1. Emotional Regulation, Virtual Reality, and Electrocardiogram (Will be Submitted in 11/2025)  
Efficacy of Virtual Reality Meditation in Enhancing Emotional Regulation in Older Adults with MCI and Bipolar Disorder  
Funding Agency: National Institute on Aging (NIA R21)  
Role: Co-Principal Investigator (Pilot studies have been completed and published)
2. Sleep Quality Management and Smart Ring (Will be Submitted in 11/2025)  
Examining Confounding Factors in Sleep Promotion Using Smart Rings in Older Adults with MCI  
Funding Agency: National Institute on Aging (NIA R61)  
Role: Co-Principal Investigator (Pilot studies have been completed)
3. Early Detection of Apathy and Dementia (Submitted in 07/2025)  
Sensor-Augmented Multimodal 'Digital Apathy Signature' for the Early Detection of Apathy and Dementia Risk  
Funding Agency: Dementia & Alzheimer's Research Initiative (DARI)  
PI: Mark Benden, Co-I: Jungjoo Lee

4. Evaluation of Technology-based Interventions (Submitted in 07/2025)  
Evaluating Person-Centered, Technology-Based Solutions for Individuals Living with Dementia  
Funding Agency: Dementia & Alzheimer's Research Initiative (DARI)  
PI: Junhyoung Kim, Co-I: Jay Kim, Gang Han, Jungjoo Lee
5. Design and Test of a Sensor-Embedded Smart Sock (Submitted in 07/2025)  
Novel Sock Wearable and Software System for Gait and IMU Analysis in Neurodegenerative Disease  
Funding Agency: Dementia & Alzheimer's Research Initiative (DARI)  
MPI: Gerrad Cote, Jungjoo Lee

## **FUNDED PROJECTS INVOLVEMENT**

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1. Digital Jigsawdio Puzzle 09/2022 – 12/2023  
Jigsawdio: An audiovisual jigsaw puzzle for people with Alzheimer's Disease and Alzheimer's-Disease-Related Dementias  
MPI: Amy Young, Junhyoung Kim  
Funding Agency: National Institute on Aging (NIA, SBIR Phase I, \$499,670)  
Role: Research Coordinator
2. Mobile-based Multidomain Program (Silvia App) 05/2022 – 04/2025  
The feasibility of a smartphone-based multidomain intervention for older adults with dementia  
PI: Junhyoung Kim  
Funding Agency: Silvia Health Company (\$31,850), South Korea  
Role: Research Coordinator
3. Care Band 07/2021 – 03/2023  
A holistic approach to monitoring, measuring, and facilitating engagement among ALF residents  
MPI: Adam Sobol, Junyoung Kim  
Funding Agency: National Institute of Health (NIH, SBIR Phase I, \$288,635)  
Role: Research Coordinator
4. Virtual Reality Nature Trek and Tai Chi 01/2021 – 12/2021  
Nature-based health intervention on health and life satisfaction among nursing home residents  
PI: Junhyoung Kim  
Funding Agency: Social Science Research Commons (\$90,668), Indiana University Bloomington  
Role: Research Coordinator

## **GRANTS**

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<b>Outstanding Research Grant (\$5,000)</b>	12/2023
Digital Health and Data Science, NCTRC Research Board	
<b>NCTRC Research Grant (\$2,500)</b>	11/2022
Pathway to Independence, NCTRC Research Board	
<b>Indiana University SMART Researcher Grant (\$6,700)</b>	05/2022
Indiana University Bloomington	
<b>Janet R. MacLean Fellowship on Aging (\$4,500)</b>	05/2022
Indiana University Bloomington	
<b>NCTRC Research Grant (\$2,500)</b>	03/2022

<b>The Prominent Performance Grant (\$5,700)</b> School of Public Health, Indiana University Bloomington	01/2021
<b>The Prominent Performance Grant (\$5,700)</b> School of Public Health, Indiana University Bloomington	09/2020

## AWARDS

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<b>The Faculty Spirit Award: Research</b> The nominated faculty has outstanding research performance, dedication, and initiative. The award is exhibited in the faculty lounge board in the College of Nursing, University of Southern Mississippi.	04/2024
<b>Research Paper Award</b> Doctoral research paper competition, School of Public Health, Indiana University, Bloomington, IN The award is exhibited in the Honor's Bulletin in the School of Public Health Study: A longitudinal dose-response curve between physical activity and the prevalence of diabetes in different levels of cognitive function among older adults.	09/2022
<b>Outstanding Research Award</b> (First Placed Winner, \$700) International Organization for Health, Sports, and Kinesiology (IOHSK), Las Vegas, NV Study: Different levels of leisure walking and mental health among older adults with mild cognitive impairment.	09/2022
<b>Distinguished Research Paper Award</b> (Second Placed Winner, \$3,500) Korea Society for Regulatory Studies, Seoul, South Korea Study: Privatization of Public Sport Facilities and Management Efficiency using a Data Envelopment Analysis (DEA). (Master's Thesis, In Korean)	10/2018
<b>Outstanding Social Science Graduate Student Award</b> (\$8,000) Merit-based scholarship award, Ministry of Education, Seoul, South Korea	07/2017

## REFEREED RESEARCH PRESENTATIONS

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1. Kim, Y., **Lee, J.**, Kim, D., & Kim, J. (November 2024). Immersive Virtual Reality Meditation (IVRM) program led to improvement in emotional health and reduction in depression among people living with dementia. *The paper was presented at the Gerontological Society of America (GSA), Seattle, WA.*
2. **Lee, J.**, & Kim, J. (February 2024). The longitudinal relationship between physical activity and stress among older Korean adults with visual impairment. *The paper was presented at the Health and Wellness Among Marginalized Population in South Korea, Bloomington, IN*
3. **Lee, J.**, Kim, J., & Kim, J. (February 2024). Relationships between leisure time physical activity and perceived stress among Korean individuals with physical disabilities. *The paper was presented at the Health and Wellness Among Marginalized Population in South Korea, Bloomington, IN*
4. **Lee, J.**, & Kim, J. (January 2024). The impact of immersive virtual reality meditation on people living with dementia. *The paper was presented at the Texas Alzheimer's Research and Care Consortium (TARCC), Austin, TX*
5. Amy, A., Kim, Y., **Lee, J.**, Welsh-Bohmer, K., Ory, M., & Kim, J. (November 2023). The effect of the Jigsawdio program on cognition among older adults with dementia. *The paper was presented at the Gerontological Society of America (GSA), Tampa, FL*
6. **Lee, J.**, Oh, S., Rodriguez, M., & Kim. (November 2023). Impact of leisure activities on older adults'

- cognitive function. *The paper was presented at the Gerontological Society of America (GSA), Tampa, FL*
7. Kim, J., **Lee, J.**, Rodriguez, M., Han, A., & Ju, H. (June 2023). Identifying the relationships between types of leisure activities and cognitive functions for older adults. *The paper was presented at the Korean Association for Policy Studies, Summer Conference, Gyeongju, South Korea*
  8. Kim, J., **Lee, J.**, Kim, Y., & Ory, M. (June 2023). The longitudinal relationship between Alzheimer's disease and other dementia and participation in cognitively stimulating leisure activities among MCI and non-MCI older adults. *The paper was presented at the Korean Association for Policy, Studies Summer Conference, Gyeongju, South Korea*
  9. Kim, Y., **Lee J.**, Ko, M., Jang, Y., & Kim, J. (March 2023). A Mobile-Based Multidomain Program to Promote Older Adults' Cognitive Function. *The paper was presented at the Society for Post-Acute and Long-Term Care Medicine, Tempa, FL*
  10. **Lee, J.**, & Kim, J. (October 2022). Leisure types, coping, happiness, life satisfaction, and health perception among college students. *The paper was presented at the International Organization Health Sports Kinesiology (IOHSK), Las Vegas, NV*
  11. **Lee, J.**, & Kim, J. (October 2022). Different levels of leisure walking and mental health among older adults with mild cognitive impairment. *The paper was presented at the International Organization Health Sports Kinesiology (IOHSK), Las Vegas, NV*
  12. **Lee, J.**, & Kim, J. (November 2022). Different levels of leisure-time physical activity and mental health for older adults with diabetes in the pandemic. *The paper was presented at the Gerontological Society of America (GSA), Indianapolis, IN*
  13. **Lee, J.**, Kim, Y., & Kim, J. (November 2022). Taekwondo can be instrumental in promoting physical functioning, cognitive functioning, social interaction, and mental health. *The paper was presented at the Gerontological Society of America (GSA), Indianapolis, IN*
  14. Kim, Y., **Lee, J.**, Nuseibeh, B., Jung, M., & Kim, J. (August 2022). The utilization of nature-based Virtual Reality (VR) practice for the well-being of older adults with dementia: a case study. *The paper was presented at the Alzheimer's Association and International Conference, San Diego, CA*
  15. Kim, Y., **Lee J.**, Lee S., & Kim, J. (September 2021). Nature-based virtual reality intervention on health benefits of Korean immigrants during the COVID-19 pandemic. *The paper was presented at the American Therapeutic Recreation Association, Cleveland, OH*
  16. **Lee, J.** (December 2021). Physical and mental health differences were reported in three age groups of older adults with diabetes. *The paper was presented at the Doctoral Colloquium of Health & Wellness Design, Indiana University, IN*
  17. **Lee, J.** (December 2019). The discrepancy in baby boomer well-being between workers and retirees is mediated by community sports participation. *The paper was presented at the Doctoral Colloquium of Sport Management, Indiana University, IN*

## TEACHING

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<b>Assistant Professor</b> HPR 452 – Health Promotion for Older Adults	01/2025 – 05/2025
<b>Assistant Professor</b> HPR 411 – Adapted Activities and Techniques	01/2025 – 05/2025
<b>Assistant Professor</b> HPR 351 – Diversity Inclusion Practice	01/2025 – 05/2025



<b>Assistant Professor</b> HPR 400 – Seminar in Public Health	08/ 2024 – 12/2024
<b>Assistant Professor</b> HPR 450 – Procedure in Clinical Interventions	08/ 2024 – 12/2024
<b>Assistant Professor</b> HPR 350 – Introduction to Rehabilitation Science	08/ 2024 – 12/2024
<b>Assistant Professor</b> HPR 452 – Health Promotion for Older Adults	01/2024 – 05/2024
<b>Assistant Professor</b> HPR 411 – Adapted Activities and Techniques	01/2024 – 05/2024
<b>Assistant Professor</b> HPR 351 – Diversity Inclusion Practice	01/2024 – 05/2024
<b>Assistant Professor</b> HPR 400 – Seminar in Public Health	08/ 2023 – 12/2023
<b>Assistant Professor</b> HPR 450 – Procedure in Clinical Interventions	08/ 2023 – 12/2023
<b>Assistant Professor</b> HPR 451 – Assessment and Documentation	08/ 2023 – 12/2023
<b>Adjunct Professor</b> SPH Y379 – Rehabilitation Facilitation Techniques and Evaluation - 1	01/2023 – 05/2023
<b>Associate Instructor</b> SPH Y379 - Rehabilitation Facilitation Techniques and Evaluation - 2	01/2023 – 05/2023

## **PROFESSIONAL QUALIFICATON**

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Certified HeartMath Practitioner	01/2023
Certified Therapeutic Recreation Specialist (CTRS)	01/2023

## **WORKING EXPERIENCE**

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<b>Adapted Swimming Instructor</b> Center for Children with Autism, South Korea	05/2009 – 09/2010
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