Chung-Hyun Goh, Ph.D.
Associate Professor of Mechanical Engineering

Education

B.S.M.E.	Mechanical Engineering	Korea Military Academy, Seoul	1987
M.S.M.E.	Mechanical Engineering	Oklahoma State U., Stillwater, OK	1992
Ph.D.	Mechanical Engineering	Georgia Tech, Atlanta, GA	2002

Academic Experience

University of Texas at Tyler, Associate Professor, Mechanical Engineering 2021 - Present
University of Texas at Tyler, Assistant Professor, Mechanical Engineering 2015 - 2021
University of Oklahoma, OK, Postdoctoral Associate, System Realization Lab. 2012 - 2015

Non-Academic Experience

Defense Acquisition Program Administration, Seoul, S. Korea, Project Manager 2005 - 2012
Republic of Korean Army, S. Korea, Lieutenant Colonel (Retired) 1987 - 2012

Current Membership in Professional Organizations

American Society of Mechanical Engineers (ASME), 1997 - Present

Honors, Awards, Grants

ASME Student Section Achievement Award 2023-2024 (Faculty Advisor), 2024
https://sections.asme.org/student-section-recognition-program

Supervised student (Sufian Almitwali), the 3rd place in 2023 Business Model Competition at UT Tyler, 2023

Knee Extensor Eccentric Control for Landing Balance of Stand-to-Sit and its Relationship with Postural Stability During Perturbation Responses, The Research, Scholarship, and Sponsored Programs at the University of Texas at Tyler, $30,000, 2023

Tai Chi Exercise Ball design: US Patent 10765905 (issued on 8 September 2020); PI-Dr. Y.T. Wang, Co-PIs-Dr. **C.H. Goh**, Dr. Weerawat Limroongreungrat, and Dr. Ting Liao Separate Yin and Yang parts using poly-magnets (for mind-body control and muscle strength)

Development and Evaluation of the Robotic Patient Transfer Device for Healthcare Professionals, The Presidential Interdisciplinary Grant Program by the Office of Research and Scholarship at UT Tyler, $20,000, 2019-2020

Service to the Profession and to the community

- Guest editor with Dr. Mukul Shirvaikar for the Special Issue: "AI and Computer Technologies in Sports and Healthcare" in Applied Sciences (2024 - Present)
- ASME session chair of MR-6-1, ASME IDETC/CIE 2024, Washington, DC, USA
- Technical committee member for the 6th International Conference on Mechatronics Systems and Control Engineering (ICMSCE-2024), September 27-29, 2024, Singapore
- Organizing committee member for the 5th International Conference on Aerospace, Mechanical, and Mechatronics Engineering (ICAMME-2024), April 24-25, 2024, Kuala Lumpur, Malaysia
- 2023 NSF Graduate Research Fellowship Program (GRFP) review panel, 2023

- Guest editor with Dr. Mukul Shirvaikar for the Special Issue: Computer-assisted Technologies in Sports Medicine and Rehabilitation in Applied Sciences (2022)
- *Technical/Organizing committee members* for the IEEE Green Tech Conference, Houston, TX (2022)
- Editorial board members in the Digital Manufacturing Technology (2021),
- *Member of Advisory Board* for the World Research Forum for Engineers and Researchers (2020)

Principal Publications and Presentations (last five years):

- W. Jeon, A. Dalby, X.N. Dong, **C.H. Goh** (2024), Effects of Initial Foot Position on Neuromuscular and Biomechanical Control During the Stand-to-Sit Movement: Implications for Rehabilitation Strategies, *Plos One* [ACCEPTED]
- W. Jeon, X.N. Dong, A. Dalby, **C.H. Goh** (2024), The Influence of Smoothness and Speed of Stand-to-Sit Movement on Joint Kinematics, Kinetics, and Muscle Activation Patterns. *Frontiers in Human Neuroscience*. 18, pp. 1399179-139990. https://doi.org/10.3389/fnhum.2024.1399179.
- J. Anthony, **C.H. Goh**, A. Yazdanshenas, Y.T. Wang (2024), Redesign of Leg Assembly and Implementation of Reinforcement Learning for a Multi-Purpose Rehabilitation Robotic Device (RoboREHAB). *Applied Sciences*. 14(2), pp. 516-528. https://doi.org/10.3390/app14020516
- A. Bourgeois, B. Rice, **C.H. Goh** (2024), Design Optimization of the Lift Mechanism in the Robotic Walking Training Device Using the Engineering Design Methodology. *Applied Sciences*. 14(1), pp. 327-347. https://doi.org/10.3390/ app14010327
- J. Anthony, C. Ballard, **C.H. Goh**, J. Carr, W. Jeon (2024), Utilizing Reinforcement Learning to Improve Gait Training Performance and Development of Gravity-Compensating Control System for RoboREHAB Device, Proceedings of the ASME 2024 IDETC/CIE, Paper Number DETC2024-143328, August 25-28, 2024, Washington, DC, USA.
- J. Anthony, M.A. Lucci, A. Dixon, **C.H. Goh** (2024), Utilizing a Deep Learning-Computational Fluid Dynamics Surrogate to Identify Aneurysm-Prone Locations in Human Arteries, 9th Thermal and Fluids Engineering Conference (TFEC), April 21-24, 2024, Oregon State University, Corvallis, OR, USA. **DOI:** 10.1615/TFEC2024.bio.051419.
- J. Anthony, **C.H. Goh**, and Y.T. Wang (2022), Redesign of Leg Assembly and Implementation of Reinforcement Learning for Robotic Walking Training Device, KSME Annual Meeting 2022-International Session, November 9-12, 2022, Jeju, Korea.
- K.B. Bumbard, H. Herrington, **C.H. Goh**, and A. Ibrahim (2022), Incorporation of Torsion Springs in a Knee Exoskeleton for Stance Phase Correction of Crouch Gait, *Applied Sciences*, **12**, pp. 7034-7048. https://doi.org/10.3390/app12147034.
- J. Anthony, A. Dixon, **C.H. Goh**, and M. Lucci (2022), Feedback Control of Medication Delivery Device Using Machine Learning-Based Control Co-Design, *Journal of Software Engineering and Applications*, **15**, pp. 220-239. https://doi.org/10.4236/jsea.2022.157013.
- A. Yazdanshenas, A. Yazdanshenas, and **C.H. Goh** (2020), Computer-Aided Gear Product Realization using Enhanced Decision-Making in Material Selection and Reliability Assessment, *Journal of Mechanical Science and Technology*, **34**(12), pp. 5167-5175.
- Y.T. Wang, **C.H. Goh**, T. Liao, X.N. Dong, G. Duke, D. Alfred, Y. Yang, J. Xu, and S. Yu (2020), Effects of Wheelchair Tai Chi Ball Exercise on Physical and Mental Health and Functional Abilities among Elderly with Physical Disability, *Research in Sports Medicine*, pp. 1-14, DOI: 10.1080/15438627.2020.1777553.
- A. Yazdanshenas, A. Yazdanshenas, and **C.H. Goh** (2020), Automatic and Accurate Repositioning of C-Arm Prototype using Motion Capture Systems and Deep Learning, *Springer Nature: SN Computer Science*, **1** (3), 135, DOI: 10.1007/s42979-020-00130-1.