TSUNG-HAN "ROBIN" HSIEH

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EXPERIENCE

Serelix Robotics Inc., Co-Founder and CEO 11/2024 – present

- Leading fundraising, product strategy, and go-to-market efforts.
- Overseeing product development, strategic partnerships, and intellectual property strategy.
- Designing and prototyping electromechanical systems, integrating sensors, actuators, and AI-based control algorithms.

NuVu Studio, Robotics Engineer and Coach 04/2016 – 06/2017

- A full-time innovation school for middle and high school students.
- Taught the students robotics-related skills and guide them through complex design options.

BiOM (BionX Medical Technologies), Mechanical Engineering Intern 05/2015 – 08/2015

- Supported the design, test, debug, verification and validation of new mechanisms.
- Ran component and system level tests and experiments.

National Taiwan University, Department of Bio-Industrial Mechatronics Engineering Undergraduate Researcher 07/2010 – 06/2013

- Developed a wearable gait analysis system using force sensors and potentiometers.
- Designed and controlled of a powered exoskeleton for lower extremity with a PhD student.

National Taiwan University, School and Graduate Institute of Physical Therapy Undergraduate Research Assistant 07/2012 – 06/2013

- Designed a portable wireless ankle tracking assessment and training device.
- Developed software for measuring the length of muscle-tendon units in ultrasonography.

CAVEdu Robotics Education Group, Co-founder and lecturer 07/2008 – 08/2014

- A group that is dedicated to promoting robotics education in Taiwan.
- Gave lectures, held workshops, and trained teachers ranging from primary schools to colleges.

EDUCATION

Massachusetts Institute of Technology, Media Lab, Biomechatronics Group Cambridge, USA
Doctor of Philosophy in Media Arts and Sciences August 2024
Thesis: Mechatronic Design and Evaluation of a Two-Degree-of-Freedom Powered Ankle-Foot Prosthesis with Myoneural Interfacing Capabilities

Massachusetts Institute of Technology, Media Lab, Biomechatronics Group Cambridge, USA
Master of Science in Media Arts and Sciences May 2019
Thesis: Design and Control of a Two-Degree-of-Freedom Powered Ankle-Foot Prosthesis

Carnegie Mellon University, Robotics Institute Pittsburgh, USA
Master of Science in Robotic Systems Development December 2015
Project: Powered Knee and Ankle Prosthesis for Transfemoral Amputees

National Taiwan University Taipei, Taiwan
Bachelor of Science in Bio-Industrial Mechatronics Engineering June 2013
Undergraduate Thesis: A Wearable Walking Monitoring System for Gait Analysis

HONORS AND AWARDS

- K. Lisa Yang Center of Bionics Research Fellow, 2023.
- Outstanding Research Award Fellow, Foxconn Technology Group, 2021.
- Outstanding Research Award Fellow, Foxconn Technology Group, 2018.
- Best Poster Award, 2011 Symposium of Biomechatronic Engineering, Taiwan Institute of Biological Mechatronics (TIBM), Taiwan, 2012
- Remarkable Award, 2011 National Student Project Contest, Ministry of Education, Taiwan, 2011
- College Undergraduate Research Scholarships, National Science Council, Taiwan, 2011
- 1st prize, 2011 Competition of Microprocessor, NTU BIME, Taiwan, 2011

SELECTED PUBLICATIONS

Journal Papers

[1] H. Song, T. H. Hsieh, S. H. Yeon, et al., "Continuous neural control of a bionic limb restores biomimetic gait after amputation," Nature Medicine, 2024.

[2] T. H. Hsieh, S. H. Yeon, and H. Herr, "Energy Efficiency and Performance Evaluation of an Exterior-Rotor Brushless DC Motor and Drive System across the Full Operating Range," Actuators, 2023.

[3] T. H. Hsieh, Y. C. Tsai, C. J. Kao, Y. M. Chang, and Y. W. Lu, "A Conceptual Atomic Force Microscope using LEGO for Nanoscience Education," International Journal of Automation and Smart Technology, 2014.

[4] A. C. Tsai, T. H. Hsieh, J. J. Luh, and T. T. Lin, "A Comparison of Upper-limb Motion Pattern Recognition Using EMG Signals during Dynamic and Isometric Muscle Contractions," Journal of Biomedical Signal Processing and Control, 2014.

Conference Papers

[1] K. Chiao, A. C. Tsai, T. H. Hsieh, M. T. Wu, T. T. Lin, and P. F. Tang, "Development of a Portable Wireless Ankle Tracking Assessment and Training Device: Preliminary Results," 6th Asia-Western Pacific Regional Congress of the World Confederation for Physical Therapy and 12th International Congress of Asian Confederation for Physical Therapy, Taichung, Taiwan, 2013.

[2] T. H. Hsieh, A. C. Tsai, C. W. Chang, K. H. Ho, W. L. Hsu, and T. T. Lin, "A Wearable Walking Monitoring System for Gait Analysis," 34th International Conference of the IEEE Engineering in Medicine and Biology Society, San Diego, CA, USA, 2012.

[3] T. H. Hsieh, and C. H. Tseng, "The Programming Software for Hands-on Robot Education," in Proceedings of 43rd International Symposium on Robotics, Taipei, Taiwan, 2012.

[4] T. H. Hsieh, A. C. Tsai, and T. T. Lin, "Design and Analysis of a Mobile Gait Monitoring System," in Proceedings of 2011 Symposium of Biomechatronic Engineering, Chia Yi, Taiwan, 2011. (in Traditional Chinese)

Books

[1] C. H. Tseng, W. H. Wu, M. Y. Lu, T. H. Hsieh, H. Y. Hsueh, and T. L. Weng, *LabVIEW for Arduino: A Perfect Combination of Control and Application*, 1st ed., Taipei: Fullon, 2013. (in Traditional Chinese)

[2] C. H. Tseng, W. M. Lai, T. H. Hsieh, H. Y. Xue, and Y. X. Lin, *Android Easy Programming: App Inventor for Programming Robots*, 1st ed., Taipei: Fullon, 2012. (in Traditional Chinese)

[3] W. H. Wu, C. H. Tseng, T. H. Hsieh, J. B. Lu, Z. L. Weng, and Z. M. Huang, *Handbook of LabVIEW Programming: Building Your Own Intelligent Robots*, 1st ed., Taipei: GoTop, 2010. (in Traditional Chinese)

[4] C. H. Tseng, and T. H. Hsieh, *New Horizons of Robots: NXC and NXT*, 2nd ed., New Taipei City: Blue Ocean, 2010. (in Traditional Chinese)