Christina Zong-Hao Ma (PhD, CPO, CRT)

Assistant Professor
Department of Biomedical Engineering (BME)
The Hong Kong Polytechnic University (PolyU)
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Education & Professional Qualifications

2013.12-2017.12 **PhD** in **Prosthetics Orthotics and Rehabilitation Engineering** (awarded Sep 2018), Faculty of Engineering, The Hong Kong Polytechnic University, Hong Kong SAR.

2008.09-2012.06 **BSc** in **Prosthetics & Orthotics (P&O)** (Honor of Outstanding Graduate), West China School of Medicine, Sichuan University, Chengdu, China.

2012.06 **Certified Prosthetist & Orthotist (CPO, ISPO Category I)**, International Society for Prosthetics and Orthotics (ISPO-SICH005).

2013.05 **Certified Rehabilitation Therapist (CRT)**, National Health Commission, China (13207211).

Academic & Clinical Experience

2025.01- current **Research Seminar Coordinator**, PolyU BME.

2023.09-2024.08 **Engineering Doctorate (EngD) Programme Leader**, PolyU BME.

2020.07- current **Assistant Professor** (Lab in-charge: Smart Ageing and Active Health Lab, MN107), Department of Biomedical Engineering, The Hong Kong Polytechnic University, Hong Kong SAR.

2020.04-2020.06 **Assistant Professor** (Universitetslektor, permanent position), Department of Rehabilitation, Jönköping University, Jönköping, Sweden.

2018.12-2020.03 **Lecturer** in Prosthetics & Orthotics (Universitetsadjunkt, 1-year teaching position), Department of Rehabilitation, Jönköping University, Jönköping, Sweden.

2017.12-2018.11 **Postdoctoral Research Associate** in Biomedical Ultrasound Imaging, Department of Biomedical Engineering, PolyU, Hong Kong SAR.

2017.06-2017.12 **Visiting Research Scholar** in Mechanical Engineering, College of Engineering, University of Michigan, Ann Arbor, USA.

2012.07-2013.12 **Certified Prosthetist & Orthotist / Clinical Instructor** (permanent employment), Prosthetic and Orthotic Center, China Rehabilitation Research Center, Beijing, China.

2011.07-2012.06 **Intern Prosthetist & Orthotist,** Prosthetic and Orthotic Center, Sichuan Rehabilitation Center, Chengdu, China; Prosthetic and Orthotic Center, West China Hospital, Chengdu, China.

Research Overview

Research Interests:

Posture, Balance & Gait
Fall Prevention
Rehabilitation Engineering
Smart Aging Solution

Research Impact as of July 2025:

h-index / top 25% journal papers per Scopus: 13 / 59.5%
total citations per Scopus: 485
h-index / publications per Web of Science: 12 / 47
total citations per Web of Science: 441
h- / *h10-index* per Google Scholar: 16 / 17
total citations per Google Scholar: 753

Teaching Experience

The Hong Kong Polytechnic University (2020 onward):

Above-Knee Prosthetics (BME42158, 4 credits, Theory & Practice)	**Subject Leader**	BSc	Sem 2, Since 2025
Advanced Prosthetics and Orthotics (BME5130, 3 credits)	**Subject Leader**	MSc	Sem 1, Since 2025
Below-Knee Prosthetics (BME32155, 4 credits, Theory & Practice)	**Subject Leader**	BSc	Sem 1, Since 2025
Digital Design and Fabrication for Healthcare Services (BME 42154, 3 credits, Theory & Practice) **[new course]**	Lecturer	BSc	Sem 1-2, since 2023
Guided Study in Biomedical Engineering I/II/III (BME6851-6853, 3 credits)	**Subject Coordinator**	EngD	Sem 1-2, 2023-2024
Advanced Topic in Biomedical Engineering (BME6000, 3 credits)	Lecturer	PhD/ MPhil	Sem 1, since 2021
Wearable Technology for Digital Health (BME5111, 3 credits) **[new course]**	**Subject Leader**	MSc	Sem 1, 2022-2025
Modern Rehabilitation Engineering and Robotics (BME5134, 3 credits)	Lecturer	MSc	Sem 2, 2021-2025
Rehabilitation Engineering and Assistive Technology (BME31134, 3 credits, Theory & Practice) **[revamped course]**	**Subject Leader**	BSc	Sem 2, 2021-2025
Assistive Technologies: Service Learning towards the Elderly and Disabled (BME3S02, 3 credits) **[2 cohorts per academic year]**	**Subject Leader**	BSc	Sem 1-2 & Sem 2-3, 2020-2025
Technologies for Smart Ageing (BME1D03, 3 credits) **[2 cohorts per academic year]**	Lecturer	BSc	Sem 1&Sem 2, 2020-2024
Biomedical Engineering in Society (BME11108, 1 credit)	**Subject Leader**	BSc	Sem 1-2, 2020-2022

Jönköping University (2018-2020):

Prosthetics & Orthotics, Thesis (HOEP11, 15 credits)	**Course Coordinator**	BSc	2020 Spring
Scientific Method and Statistics (HSCG10, 7.5 credits) **[new course]**	Lecturer	BSc	
Prosthetic Management & Biomechanics of the Lower Limb I (HPMK19, 15 credits, Theory & Practice)	**Course Coordinator**	BSc	
Orthotic Management & Biomechanics I (HO1K19, 15 credits)	Lecturer	BSc	
Orthotic Management & Biomechanics I (HO1K19, 15 credits, Theory & Practice) **[new course]**	**Course Coordinator**	BSc	2019 Fall
Prosthetic & Orthotic Management of the Upper Limb (HOLK19, 7.5 credits, Theory & Practice) **[new course]**	Lecturer	BSc	
Prosthetics & Orthotics, Theory (HPON1, 10.5 credits)	Lecturer	BSc	
Prosthetic Management & Biomechanics of the Lower Limb I (HPMK19, 15 credits, Theory & Practice) **[new course]**	**Course Coordinator**	BSc	2019 Spring
Prosthetics & Orthotics - Foot Orthotics (HOTN11, 30 credits, Practice)	Lecturer	BSc	
Prosthetics & Orthotics, Thesis (HOEP11, 15 credits)	Supervisor	BSc	
Biomechanics - Calculations (HBMK14, 7.5 credits)	**Course Coordinator**	BSc	2018 Fall

Awards & Honors

1. **1st Runner-up of Student Research Award** (Cash Prize HK$2,000), Hong Kong Medical and Healthcare Device Industries Association (HKMHDIA) (Supervisee: ZHU Tanglong Ringo; PhD student) (2024).
2. **1st Runner-up of Oral Presentation Competition**, 2023 China Biomedical Engineering Conference & Medical Innovation Summit 2023 (BME2023) 中国生物医学工程大会暨创新医疗峰会口头报告一等奖 (Supervisee: LIU Wei; PhD student) (2023).
3. **PolyU PhD Scholars International Collaborative Research Fellowship 2023/24**, Graduate School, PolyU (Supervisee: ZHU Tanglong Ringo; PhD student) (2023).
4. **Micro Fund 2023-24** (Cash Prize HK$20,000), Knowledge Transfer and Entrepreneurship Office, PolyU (Supervisee: ZHU Tanglong Ringo, HUANG Chen Cece, LI Kejing, LUO Yu-Yan Laura; Postdoc and PhD students) (2023).
5. **Dr Winnie S M Tang PolyU Student Innovation & Entrepreneurship Scholarship** (Scholarship HK$5,000 and Cash Prize HK$10,000), Proof-of-concept Funding Scheme 2023, Knowledge Transfer and Entrepreneurship Office, PolyU (Supervisee: ZHU Tanglong Ringo, HUANG Chen Cece, LI Kejing, LUO Yu-Yan Laura; Postdoc and PhD students) (2023).
6. **Co-innovation Award**, Health Future Challenge 2023, Knowledge Transfer and Entrepreneurship Office, PolyU (Supervisee: ZHU Tanglong Ringo, HUANG Chen Cece, TONG Cheuk Ying Charmaine, HUNG Tim Mei Timmi; Postdoc, PhD, MSc and BSc students) (2023).
7. **Awardee of UGC Targeted Taught Postgraduate Programmes Fellowships Scheme**, University Grants Committee, Hong Kong SAR Government (Supervisee: HUNG Tim Mei Timmi; MSc student) (2022).
8. **Best Abstract Award (Group) - Prosthetics and Orthotics Outstanding Capstone Project Award**, the 7th Singapore Rehabilitation Conference & 7th Asian Prosthetics and Orthotics Scientific Meeting (SRC – APOSM 2022) (Supervisee: TONG Cheuk Ying Charmaine; BSc student) (2022).
9. **Champion of Best Project Award, Inter-departmental Final Year Project 2021-22**, Faculty of Engineering, PolyU (Supervisee: WONG Hok Man Leon; Project: Proactive Companion Robot; BSc student) (2022).
10. **Service-Learning Scholarship - FYP / Capstone Project (2021/22)**, Service-Learning and Leadership Office, PolyU (Supervisee: TONG Cheuk Ying Charmaine; BSc student) (2021).
11. **Pedagogic Award 2020,** School of Health and Welfare - Education Committee (Hälsohögskolans Utbildningsutskott, HUTT), Jönköping University (2020).
12. **Travel Sponsorship** to attend the 17th ISPO World Congress 2019, International Society for Prosthetics and Orthotics - Hong Kong Society (ISPO-HK) (2019).
13. **Distinguished Alumni Award**, School of Rehabilitation Sciences, West China School of Medicine, Sichuan University (2018).
14. **The Hong Kong Special Administrative Region Government Scholarship - Reaching Out Award**, Education Bureau, Hong Kong Special Administrative Region Government (2017).
15. **Travel Stipend** to attend the 16th ISPO World Congress 2017, International Society for Prosthetics and Orthotics (ISPO) (2017).
16. **Top Prize of Student Research Award**, Hong Kong Medical and Healthcare Device Industries Association (HKMHDIA) (2016).

17. **Outstanding Paper Award**, The 10th Beijing International Forum on Rehabilitation (2015).
18. **Research Postgraduate Studentship**, PolyU (2015-2017).
19. **Outstanding Individual Award** of organization committee, the 6th National Congress, China Disabled Persons Federation (2013).
20. **Outstanding Graduate Award**, Sichuan University (2012).
21. **National Scholarship**, Ministry of Education, China (2010).

Grants

(Total funded number / amount as Principal Investigator/Co-PI: ≥ **15** / **HK$4M**; Donation: ≥ **1** / **HK$6M**)

External Competitive Grants as Principal Investigator (PI) / Co-PI

1. **Health and Medical Research Fund (HMRF) - Research Fellowship Scheme 香港醫務衞生局-醫療衞生研究基金 – 研究獎學金計劃.** "Smart digitalized intervention for fall prevention of older adults in residential care facilities: a feasibility study and pilot randomized controlled trial (RCT) (Ref: 09230037, HHB/H/41/69)". HK$709,670, 2025/01/01-2026/12/31 (**PI: MA Zonghao**; Co-I: KWOK Chi Yui Timothy, WONG Man Sang, VAN SCHOOTEN Kimberley, YANG Lin, LI Yan, BAI Ziqian, WANG Shujun, ZHENG Yongping, HUANG Chen).
2. **Chinese Association of Rehabilitation Medicine - Science and Technology Development Project (Research Cultivation Grant) 中国康复医学会-2023 年度科技发展项目-培育项目.** "基于可穿戴人体运动分析系统的脑卒中患者下肢运动控制机制及康复干预策略研究 Study on mechanisms of lower-limb motor control and strategies for precise rehabilitation management in stroke survivors using a state-of-the-art wearable multi-modal motion analysis system (Ref: KFKY-2023-050, R2023A055)". RMB50,000, 2023/12/01-2025/12/31 (**PI: MA Zonghao**; Co-I: LIU Wei, LUO Changliang, LU Chengjie, ZHENG Yongping, LUO Yuyan, ZHU Tanglong, LI Kejing).
3. **Hong Kong Research Grants Council (RGC) - Early Career Scheme (ECS) 香港研究資助局-傑出青年學者計劃.** "A Novel, Wearable, Ultrasound-Imaging-Based Visual Feedback (UVF) Training Strategy for Improving Muscle Function and Physical Activity of Community-Dwelling Stroke Survivors: A Randomized Controlled Trial (Ref: 25100523; F-PP85)". HK$883,254, 2023/09/01-2026/08/31 (**PI: MA Zonghao**; Collaborator: WONG Arnold, YANG Lin, ZHENG Yongping).
4. **Hong Kong Research Grants Council (RGC) - Direct Allocation Grant (DAG) - Funding Support to Small-Scale Research Project 香港研究資助局-直接撥款資助-小型研究項目**. "Investigating Mechanism of Falls in Older Individuals from Muscle Activity Perspective by An Innovative Wearable Ultrasound Imaging System: A Pilot Study (Ref: P0036830, PB1J)". HK$200,000, 2021/07/01-2023/06/30 (**PI: MA Zonghao**).
5. **Hu Nan Disabled Person's Federation, Hunan Province, China**. "Towards Smart Rehabilitation: Needs of Smart Wearable Balance-enhancing Devices in People with Disabilities at Hunan Province (Ref: 2019XK028)". CN¥20,000, 2020/01/01-2021/12/31 (PI: ZHOU Yujing, **Co-PI: MA Zonghao**; Co-I: HUANG Mengjie, ZOU Yingjie, ZHAO Dongfeng, XIONG Dan, MA Rui)
6. **Science & Technology Entrepreneur Programme (STEP), Hong Kong Science and Technology Parks (HKSTP) Corporation**. "iBalanx – Smart Insole with Instant Reminder to Improve Balance and Walking (Interactive HealthTech Limited, STEP ID: 219)". HK$100,000, 2019/04/01-2020/04/28 (with technologies derived from my PhD research; **Supervisor and**

International partner: MA Zonghao; Team members: CHUNG Alan, HUANG Zihao, CHENG Connie, ZHENG Yongping).

External Donations as PI / Co-PI

1. **Zhengzhou Alien Capsule Medical Equipment Co., Ltd./ Chairman of the Board (ZHANG Xinmin) - Three sets of Alien Capsule Spinal Decompression System** for supporting the research project of ""Developing a Novel Treatment Strategy and Protocol for Patients with Adolescent Idiopathic Scoliosis (AIS)" (Ref: BME-2023-004-K). Donation Cash In-kind, HK$6,000,000 (with one set of system or HK$2,000,000 allocated to Dr. Ma's lab), 2023/05/25 (**Co-PIs**: WONG Man Sang & **MA Zonghao**).

External Competitive Grants as Co-Investigator (Co-I)

1. **Innovation and Technology Support Programme (ITSP) (Seed), Innovation and Technology Commission, HKSAR.** "AI-Powered Intelligent System for Dynamic Assessment of Hand Function (Ref: ITS/297/23)". HK$1,313,153, 2025/01/01-2026/12/31 (PI: FU Hong; Co-Is: CHAN Che Hin Chetwyn, WANG Jun, XU Yan Wen, **MA Zonghao**).
2. **Innovation and Technology Fund for Better Living, HKSAR.** "Smart Knee Ambassador: Deep Learning-enabled Community Knee Osteoarthritis Screening and Rehabilitation Program (膝智康健：社區膝關節炎智能篩查及復康計劃) (Ref: FBL/B046/22/S)". HK$ 3,057,058.8, 2023/09/01-2026/08/31 (PI: WEN Chunyi; Co-PIs: LIU Justina, SO Billy; **Co-Is**: **MA Zonghao**, CHEUNG Chung Wai James).
3. **Innovation and Technology Support Programme (ITSP) (Platform), HKSAR.** "Intelligent Wearable System for Impact Safety Protection and Real-Time Monitoring (Ref: ITP/009/23TP)". HK$2,987,279, 2023/03/31-2025/09/29 (PI: SHOU Dahua; Co-I: TAO Xiaoming, FAN Jintu, YE Lin, **MA Zonghao**)
4. **Sports Science and Research Funding Scheme ("SSRFS"), HKSAR.** "An Intelligent multi-modal system for Boccia training (Ref: xxx)". HK$5,980,000, 2022/09/01-2024/08/31 (PI: FU Hong; Co-I: LING Man Ho Alpha, SONG Yanjie, YU Leung Ho Philip, TONG Xiuhong, SUN Fenghua, CHOW Hung Kay Daniel, **MA Zonghao**)
5. **Chief Executive's Community Projects, Jockey Club Smart Ageing Hub, HKSAR.** "Technology Programme for Modernisation Scheme for Non-profit Making Self-Financing Residential Care Homes for the Elderly". HK$24,000,875, 2022/12-2026/12 (PI: ZHENG Yongping; Co-I: KWOK Timothy, LEUNG Angela, **MA Zonghao**)
6. **Health and Medical Research Fund (HMRF) Fellowship, HKSAR**. "Effects of a Physical-Psychological Integrative (PPI) intervention on Physical inactivity, Depression and Chronic pain for Community-Dwelling Spinal Cord Injury Survivors: a Pilot Randomized Controlled Trial (Ref: FHB/H/41/69, 06200147)". HK$952,685, 2021/09/01-2023/09/10 (PI: LI Yan; Co-I: YIM Chor Pik Rabi, WONG Yu Lok Arnold, BRESSINGTON Daniel Thomas, YEUNG Wing-Fai, **MA Zonghao**, KOR Pui Kin, MOLASIOTIS Alex)
7. **Innovation and Technology Support Programme (ITSP), Innovation and Technology Commission, HKSAR.** "Exo-neuro-musculo-skeleton with Balance Sensing Feedback for Ankle-foot Rehabilitation after Stroke (Ref: ITS/062/19)". HK$1,256,375, 2020/03/01-2022/02/28 (PI: HU Xiaoling; Co-Is: **MA Zonghao**).

Internal Competitive Grants as PI

1. **PAIR International Collaboration Scheme, PolyU Academy for Interdisciplinary Research (PAIR) The Hong Kong Polytechnic University**. "Outbound Visit to Rehabilitation Research Institute of Singapore, Nanyang Technological University", HK$14,007.6, 2025/05/04-2025/05/07 (**PI: MA Zonghao**).
2. **"BME support for staff got GRF/ECS ranking 3.5 or above", One-line Budget, Department of Biomedical Engineering, The Hong Kong Polytechnic University**. "A Novel Digitalized 3D Spinal Intervention Protocol for Non-surgical Management of Adolescent Idiopathic Scoliosis (AIS): A Randomized Controlled Trial (Ref: P0053711, WZB4)". HK$200,000, 2024/12/01-2027/11/30 (**PI: MA Zonghao**).
3. **Research Institute for Smart Ageing (RISA), The Hong Kong Polytechnic University**. "Utilizing State-of-the-art Multi-Channel Wearable Ultrasound Imaging to Evaluate Fall Risk and Prevent Falls of Older People (Ref: P0050950, CDKC)". HK$500,000, 2024/05/01-2027/04/30 (**PI: MA Zonghao**, Co-I: WONG Arnold, YANG Yijian, VAN SCHOOTEN Kimberley, FU Hong, WANG Emma, HU Xiaoling, BAI Xue, YANG Lin, FU Amy, ZHENG Yong-Ping, KWOK Timothy, LYU Jihui).
4. **Research Institute for Smart Ageing (RISA), The Hong Kong Polytechnic University**. "Real-Time Ultrasound-Imaging Guided Muscle Training Approach for Stroke Individuals (Ref: P0050739, CDJK)". HK$100,000, 2024/04/30-2027/04/29 (**PI: MA Zonghao**).
5. **Undergraduate Research and Innovation Scheme (URIS), The Hong Kong Polytechnic University (UGC)**. "A sensor-based system for monitoring and providing feedback on physical activity in older adults. (Ref: P0047968, Q-TAEE, URIS2023-062)". HK$30,000, 2023/09/01-2024/08/31 (**PI: MA Zonghao**; Supervisee: Mr. XU Zhuoning Johnny, EEE - Department of Electrical and Electronic Engineering).
6. **Seed Fund for Promoting Digital Literacy, Teaching Development Grant (TDG) for 2022-25, The Hong Kong Polytechnic University**. "Seed Fund for Promoting Digital Literacy - Department of Biomedical Engineering (Ref: 49AZ)". HK$100,000, 2023/06/01-2024/05/31 (**PI: MA Zonghao**, Co-I: WONG Man-Sang, KOBAYASHI Toshiki). **[Learning & Teaching Project]**
7. **"Tell Your Story: Demonstrate Your Impact" - Support from the Department, Department of Biomedical Engineering, The Hong Kong Polytechnic University**. "Towards more effective fall assessment, monitoring, and prevention in older and/or disabled people (Ref: 9BH7)". HK$200,000, 2023/04/24-2024/06/30 (**PI: MA Zonghao**).
8. **Funding for Strategic Plan Initiatives to Enhance the Student Learning Experience through the Use of Interactive Pedagogies 2021-22 (2nd round), The Hong Kong Polytechnic University**. "Innovative co-creation of multimedia in teaching to engage students in enquiry-based active learning (Ref: SPF21-22/A1/BME01, 8CTK)". HK$150,000, 2022/05/16-2023/06/30 (**PI: MA Zonghao**; Co-PI: HU Xiaoling; Co-I: WEN Chunyi, WANG Yan, CHEUNG James, LI Yan, WONG Man-Sang). **[Learning & Teaching Project]**
9. **Research Institute for Smart Ageing (RISA), The Hong Kong Polytechnic University (UGC).** "Prevention, Evaluation, and Monitor of Falls in Older Adults with Big Data Analytics: Towards an Objective and Cost-effective Approach (Ref: P0038945, CD64)". HK$400,000, 2021/09/16-2024/09/15 (**PI: MA Zonghao**, Co-PI: WONG Arnold; Co-I: YANG Lin, FU Hong, BAI Xue, WONG Man Sau, ZHENG Yong-Ping, CHEUNG James).
10. **Start-up Fund for New Recruits, The Hong Kong Polytechnic University (UGC).** "Physiological and Biomechanical Study of Postural Balance Controlling Mechanism in Young and Older Adults (Ref: P0034491, BE48)". HK$500,000, 2020/12/01-2023/12/31 (**PI: MA Zonghao**).
11. **PolyU Lean LaunchPad Programme (Fashion & Wearable Technology), Institute for Entrepreneurship, The Hong Kong Polytechnic University**. "iBalanx – Smart Insole with Vibrotactile Biofeedback to Improve Balance (Ref: LLP-18-007)". HK$50,000, 2018/04/01-

2018/06/30 (with technologies derived from my PhD research; **Entrepreneurial Lead: MA Zonghao**, Team members: HUANG Zihao; Entrepreneurial Mentor: Dr. BROWN Donna, Academic Mentor: Prof. ZHENG Yongping).

Internal Competitive Grants as Co-I

1. **TDG 2022-25 Round 2 - Category A, Projects on deepening VTL adoption, The Hong Kong Polytechnic University**. "Development of a team-building e-platform for improving students' teamwork in inter-disciplinary subjects (TDG22-25/R2/VTL-5, 1.4Y.XX.49T1)". HK$ 404,534, 2023/07/01-2024/12/31 (PI: KAR Fung Yi; Co-I: LAU Hin Chung, NGAI Grace, MUI Kwok Wai Horace, WONG Ling Tim, NG Hiu Fung Peter, KOR Pui Kin, **MA Zonghao**, LAM Chi Hin, LAI Po Yan, LAU Chun Fai Ivan, PANG, Chun Yu). **[Learning & Teaching Project]**
2. **Research Institute for Sports Science and Technology (RISports), The Hong Kong Polytechnic University**. "Exploration of Knee Joint Protection Mechanism and application in knee strap design in Walking and Running (P0043476, 1-CD5N)". HK$300,000, 2022/11/01-2024/10/31 (PI: WANG Yan; Co-I: TENG Long, TAN Qitao, **MA Zonghao**).
3. **Research Institute for Smart Ageing (RISA), The Hong Kong Polytechnic University**. "Smart Technologies for Assessing and Enhancing Older Adults' Mobility (Ref: P0043002, 1-CD4Y)". HK$1,000,000, 2022/09/01-2024/08/31 (PI: WEN Chunyi; Co-I: **MA Zonghao**).
4. **Research Institute for Smart Ageing (RISA), The Hong Kong Polytechnic University**. "Ultrasound Imaging Powered by AI and Robotics for Ageing-Related Neuromusculoskeletal Diseases (Ref: P0043005, 1-CD5B)". HK$1,000,000, 2022/09/01-2025/08/31 (PI: ZHENG Yongping; Co-I: **MA Zonghao**).
5. **Large Equipment Fund for Teaching, Internal Research Fund: Areas of Excellence Committee, The Hong Kong Polytechnic University**. "Gait Evaluation and Training using Plantar Pressure Measuring Treadmill (BME-1) (Ref: P0036787, LEF2021-030)". HK$994,900, 2021/06/15-2022/06/30 (PI: ZHANG Ming; Co-I: YICK Kit Lun, WONG Wai Chi, WANG Yan, **MA Zonghao**, LUXIMON Yan, KOBAYASHI Toshiki).

Publications

(Total ≥ **105**: journal publication: **51**; patent: **1**; guideline: **1**; book:**2**; book chapter: **3**; conference publication: **48**)

Note: Web of Science JCR Impact Factor & Quartile, #Equal contribution, *Corresponding author, Underlined author indicates student / staff / postdoc fellow who was trained by Dr. Ma as Supervisor.

Edited Book

1. Jie Y, **Ma Z**. (2023). Pediatric Rehabilitation Popular Science Book Series – *Early Diagnosis and Rehabilitation of Flat Foot in Children* (1st ed., pages: 1-104). ISBN 978-7-5645-3441-7. Zhengzhou University Press. 《儿童扁平足早期识别与康复指导——关爱儿童康复科普丛书》，名誉主编：张明；**主编**：解益，**马宗浩**。郑州大学出版社，ISBN 978-7-5645-3441-7。
2. **Ma CZH**, Li Z, He C. (2023). *Biomechanics-Based Motion Analysis* (1st ed., pages: 1-386). ISBN 978-3-0365-8027-2 (hardback); ISBN 978-3-0365-8026-5 (PDF). DOI: https://doi.org/10.3390/books978-3-0365-8026-5. MDPI AG, Switzerland.

Guideline

1. **Ma Z.** (2020). Suggestions for Prosthetic Orthotic Clinics that Must Remain Open During the COVID-19 Pandemic - Working Document (Chinese version). International Society for Prosthetics and Orthotics. Translated by Ma Z.-H., pp. 1-10, April 2020. Weblink: https://drive.google.com/file/d/1zCGGTkDporqqb0wkGa1BotWq7gPRlpCA/view.《对在 COVID-19 病毒大流行时仍必须保持开放的假肢与矫形诊所的建议-工作文件(中文版)》 译者: 马宗浩。国际假肢与矫形协会.

Patent

1. **Ma ZH**, Zheng YP, Huang ZH. (2022). A balance and gait training method, system, and device. Chinese Patent (Ref: CN 109147904 B; Application date: 30 August 2018; Licensed date: 3 May 2022). 一种平衡和步态的训练方法、系统及终端; 发明人: 马宗浩, 郑永平, 黄子豪; 专利号: ZL201811005548.X; 公开号: 109147904A; 申请日: 2018-08-30; 公开日: 2019-01-04; 授权日: 2022-05-03.

Journal Publications (Total: 37 / **51**; 1st/corresponding/last author: 24 / **33**)

2025

1. Luo YY, Hung TM, Zheng Q, Wu HD, Wong MS, Bai ZQ, **Ma CZH* (corresponding author)**. Predicting Surgical and Non-surgical Curvature Correction by Radiographic Spinal Flexibility Assessments for Patients with Adolescent Idiopathic Scoliosis: A Systematic Review and Meta-analysis. *Global Spine Journal, accepted.* DOI: https://doi.org/10.1177/21925682251319. (**Q1**, 2024 JCR IF=3.0, Rank 27/139 in Orthopaedics). [Dr. Ma has contributed to study conception and design, material preparation, data collection, analysis, and interpretation, and reviewing and editing the article.]
2. Ye F, Rong W, Li W, Wong KT, Pang MT, Wai HW, Li L, Hong Z, Guo S, **Ma ZH**, Zheng Y, Zhang M, Chow N, Zhou S, Zhang J, Hu X*, Chen F*, Poon W. Unilateral Ankle-Foot Exoneuromusculoskeleton with Balance-Sensing Feedback for Self-Help Telerehabilitation after Stroke. *Advanced Robotics Research.* 2025; 0:e2500052. DOI: https://doi.org/10.1002/adrr.202500052.
3. Luo YY, Huang C, Song Z, Nazari V, Wong AYK, Yang L, Dong M, Zhang M, Zheng YP, Fu ASN, **Ma CZH* (corresponding author)**. Wearable Ultrasound-Imaging-Based Visual Feedback (UVF) Training for Ankle Rehabilitation of Chronic Stroke Survivors: A Proof-of-Concept Randomized Crossover Study. *Biosensors*. 2025; 15(6), 365: 1-24. DOI: https://doi.org/10.3390/bios15060365. (**Q1**, 2024 JCR IF=5.6, Rank 9/79 in Instruments & Instrumentation). [Dr. Ma has contributed to study conception and design, analysis and interpretation of data, funding acquisition, coordination of the project, and reviewing and revising the article.]
4. Li, J., Zhang, W., Zuo, S., **Ma, Z.**, Zhang, M., & Dong, M. Robot-Assisted Multi-limb Joint Muscle Strength Training and Performance Evaluation. *Journal of Bionic Engineering*. 2025, 1-18. (**Q1**, **Top 10%**, 2024 JCR IF=5.8, Rank 15/175 in Engineering, Multidisciplinary).
5. Jie Y, Zhang M, Li M, Luo CL, Dong A, Luo YY, Zheng P, Zhang X, Liu Z, Li J, Wong MS, Wang AY*, **Ma CZH* (co-corresponding author)**, Zhang M. A Mathematical Analysis of a Biomechanical

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2. Zhu TLR, Liang HB, Luo YY, Li JZ, Song Z, Zheng YP, **Ma CZH***. Older Recurrent Fallers and Older Non-Fallers' Different Ankle Muscle Thickness and Fascicle Architecture Changes during Reactive Balance Control. *IEEE EMBS R10 Smart Health Symposium 2025*, 21-22 June 2025, Hong Kong SAR. (Poster).
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5. Li KJ, Chung AKL, Hu XL, **Ma CZH***. Smart Wearable Fall Risk Assessment System for Older Adults. *IEEE EMBS R10 Smart Health Symposium 2025*, 21-22 June 2025, Hong Kong SAR. (Poster).
6. Liu W, Li YY, **Ma CZH***. The reliability and validity of clinical ultrasound to assess muscle in post-stroke patients: a systematic review. *ISPO 20th World Congress*, 16-19 June 2025, Stockholm, Sweden. (Poster).
7. **Ma CZH***, Zhu TLR, Hung TTM, Li S. Prospective Fall Prediction of Older Adults Based on Neuromuscular and Biomechanical Balance-Control Mechanisms. *2024 Rehabilitation Engineering Academic Conference*, 8-10 November 2024, Qingdao, China. (Oral).
8. **Ma CZH***. Enhancing University Students' Engagement in Studying Assistive Technology by Case-based Active Learning: A Pilot Study in Hong Kong. *ISPO Global Educators' Meeting 2024 (ISPO GEM 2024)*, 22-24 October 2024, Houston, USA. (Oral). **[Learning & Teaching Publication]**
9. Liu W, Li YY, Wu HD, Zhu TLR, Luo YY, Zheng YP, **Ma CZH***. Effect of solid ankle-foot orthosis on paretic ankle muscle contraction pattern of sub-acute stroke survivors during walking: a pilot study utilizing state-of-the-art wearable dynamic ultrasound imaging. *The 8th Asian Prosthetic & Orthotic Scientific Meeting 2024 (APOSM 2024) & The 7th Kuala Lumpur International Conference on Biomedical Engineering 2024 (biomed 2024)*, 21-24 August 2024, Kuala Lumpur, Malaysia. (Oral).
10. Luo YY, Zhou YJ, Song Z, Zheng YP, **Ma CZH***. Exploring Lower-limb Muscle Behavior in Older Fallers and Non-fallers with Wearable Ultrasound Imaging. *The 11th World Association for Chinese Biomedical Engineers (WACBE) World Congress on Bioengineering*, 4-7 August 2024, Hong Kong SAR. (Oral).

11. **Ma CZH***, Zhu TL, Zheng YP. Reactive Balance Control of Older Adults with Fall History and Fear of Falling: Probing Neuromuscular and Biomechanical Mechanisms. *The 11th World Association for Chinese Biomedical Engineers (WACBE) World Congress on Bioengineering*, 4-7 August 2024, Hong Kong SAR. (Poster).
12. Luo YY, Jie Y, Luo CL, Li MY, Yan P, Zheng YP, Wong MS, **Ma CZH***. Investigating a Novel Non-Surgical Management for Adolescent and Adult Scoliosis Using Digitalized 3D Correction and Ultrasound Assessment: A Preliminary Feasibility Study. *International Research Society of Spinal Deformities (IRSSD) Scientific Meeting 2024*, 21-23 June 2024, Hong Kong SAR. (Oral).
13. Huang C, Song Z, Luo YY, Wong A, Yang L, Zheng YP, Fu A, **Ma CZH***. Effect of Ultrasound-Imaging-Based Visual Feedback System for Ankle Dorsiflexor Strengthening in Stroke Survivors. *Joint Conference of the 18th World Congress of the International Society of Physical and Rehabilitation Medicine (ISPRM) 2024 and 7th Annual Meeting of the Rehabilitation Medicine Society of Australia and New Zealand*, 1-6 June 2024, Sydney, Australia. (Oral).
14. Liu W, Wu HD, Li YY, Zhu TLR, Luo YY, Zheng YP, **Ma CZH***. How ankle muscles contract internally while stroke survivors walking with ankle-foot-orthosis? *Joint Conference of the 18th World Congress of the International Society of Physical and Rehabilitation (ISPRM) 2024 and 7th Annual Meeting of the Rehabilitation Medicine Society of Australia and New Zealand*, 1-6 June 2024, Sydney, Australia. (Oral).
15. Luo YY, Zhou YJ, **Ma CZH***. Exploring Muscle Activity in Older Fallers and Non-fallers with Wearable Ultrasound Imaging. *2023 Joint Conference of the Australia and New Zealand Falls Prevention Society & World Falls Congress*, 26-28 November 2023, Perth, Western Australia. (Oral).
16. Zhu TLR, **Ma CZH***. Fallers use more lower-limb muscle activation and power to maintain reactive balance. *2023 Joint Conference of the Australia and New Zealand Falls Prevention Society & World Falls Congress*, 26-28 November 2023, Perth, Western Australia. (Oral).
17. Li KJ, **Ma CZH***. Fall Risk Identification in Community-dwelling Older People Using Inertial Measurement Unit (IMU). *2023 Joint Conference of the Australia and New Zealand Falls Prevention Society & World Falls Congress*, 26-28 November 2023, Perth, Western Australia. (Oral).
18. Li JZ, **Ma CZH***. Fall prediction of older people using wearable devices and AI technology. *2023 Joint Conference of the Australia and New Zealand Falls Prevention Society & World Falls Congress*, 26-28 November 2023, Perth, Western Australia. (Poster).
19. Liang SGS, Fan ESL, Lam PK, Kwok WT, **Ma CZH**, Lam FMH*. The effect of adding real-time postural feedback in balance and mobility training in older adults: a systematic review and meta-analysis. *13th Pan-Pacific Conference on Rehabilitation 2023 (PPCR 2023)*, 23-24 November 2023, Chiangmai, Thailand. (Poster).
20. Zhu TLR, **Ma CZH***. Exploring postural balance control in community-dwelling older adults with high fall risks: biomechanical and electromyographic (EMG) analyses. *The 23rd National Conference of Chinese Medical Association - Chinese Society of Physical Medicine and Rehabilitation* 中华医学会第二十三次全国物理医学与康复学学术会议, 7-10 September 2023, Shanghai, China. (Oral).
21. Liu W, **Ma CZH**, Luo CL, Li YY, & Wu HD*. Effect of Schroth Exercise on Pulmonary Function and Exercise Capacity in Patients with Severe Adolescent Idiopathic Scoliosis. *12th Asian-Pacific Conference on Medical and Biological Engineering* (APCMBE 2023), 18-21 May 2023, Suzhou, China. (Oral).
22. Liu W, Wu HD, Ling YT, Shea QTK, **Ma CZH***. Reliability and validity of assessing lower limb muscle architecture of patients with cerebral palsy using ultrasound: a systematic review. *ISPO 19th World Congress*, 24-27 April 2023, Guadalajara, Mexico. (Oral).
23. Li KJ, Chung AKL, Lam MWY, **Ma CZH***. Utilizing novel smart wearable assistive technology to facilitate sensorimotor training of stroke survivors: Towards home/community-based rehabilitation. *ISPO 19th World Congress*, 24-27 April 2023, Guadalajara, Mexico. (Oral).

24. Li Y, Li M*, Wong A, Molasiotis A, Bressington D, **Ma CZH**, Kor P, Yeung J. Evaluation of a Physical-Psychological Integrative (PPI) intervention for Community-Dwelling Spinal Cord Injury Survivors: Study Protocol of a Randomized Controlled Trial. *26th East Asian Forum of Nursing Scholars (EAFONS) conference*, 10-11 March 2023, Japan. (Oral).
25. Tong CYC, Zhu TL, Lyu PZ, **Ma CZH***. Lower-Limb Muscle Activities When Maintaining Static Balance. *7th Singapore Rehabilitation Conference & 7th Asian Prosthetics and Orthotics Scientific Meeting (SRC – APOSM 2022)*, 8-9 October 2022., Singapore. (Oral). **[Best Abstract Award (Group) - Prosthetics and Orthotics Outstanding Capstone Project Award]**
26. Zhu TL, Lyu PZ, Li S, Tong CYC, **Ma CZH***. How eight major leg muscles respond to unexpected perturbations and maintain standing balance in healthy young adults? *IUPESM World Congress on Medical Physics & Biomedical Engineering 2022*, 12-17 June 2022, Singapore. (Oral).
27. **Ma CZH***, Chung AKL, Ling YT, Huang ZH, Cheng LK, Zheng YP. Advanced smart insole system to improve outcome of balance training and walking ability. *ISG's 12th World Conference of Gerontechnology* (International Society for Gerontechnology), 18-20 May 2020, Trondheim, Norway. (Oral).
28. **Ma CZH***, Chung AKL, Ling YT, Huang Z, Cheng LK, Zheng YP. A newly-developed smart insole system with instant reminder: Paves the way towards integrating artificial intelligence (AI) technology to improve balance and prevent falls. *1st World Congress on Falls and Postural Stability 2019 (WCFPS 2019)*, 04-07 December 2019, Kuala Lumpur, Malaysia. (Poster).
29. **Ma CZH***, Chung AKL, Ling YT, Huang Z, Cheng LK, Zheng YP. Smart insole and smartwatch system with big data analytics to improve balance training. ISPO's 17th World Congress (International Society for Prosthetics and Orthotics), 5-8 October 2019, Kobe, Japan. (Oral). **[Travel Grant]**
30. **Ma CZH**, Ling YT, Shea QTK, Wang LK, Wang XY, Zheng YP*. Towards comprehensive understanding of leg muscle activity in gait by a novel wearable system with ultrasound imaging and multiple sensing. *ISPO's 17th World Congress* (International Society for Prosthetics and Orthotics), 5-8 October 2019, Kobe, Japan. (Oral).
31. **Ma CZH**, Bao T, Le V, Chambers A, Shull P, Zheng YP, Cham R, Sienko KH*. A feasibility study for gait training with foot-floor contact angle feedback. *International Society of Posture and Gait Research (ISPGR) World Congress,*2019, 30 June-4 July, Edinburgh, Scotland. (Poster).
32. **Ma CZH.**, Chung AKL., Ling YT, Huang Z, Cheng LK, Zheng YP*. Advanced smart insole system to improve outcomes of balance training and walking ability. *11th International Association of Gerontology and Geriatrics (IAGG) Asia/Oceania Regional Congress 2019*, 23-27 October 2019, Taipei. (Oral)
33. Ling YT*, **Ma CZH**, Shea QTK., Zheng YP. Spatial differentiation of muscle contraction onset using sono-mechano-myo-graphy (SMMG). *The 9th WACBE World Congress on Bioengineering 2019* (World Association for Chinese Biomedical Engineers), August 16-19, 2019, Taipei.
34. **Ma CZH.**, Lee WCC., Zheng YP*. Smart insole with instant vibrotactile biofeedback of plantar force improve gait of patients with stroke. *Asian Prosthetic and Orthotic Scientific Meeting (APOSM)* 2018, 7-9 November 2018, Bangkok, Thailand. (Oral). **[Travel Grant]**
35. **Ma CZH**, Zheng YP, Lee WCC*. Vibrotactile wearable biofeedback system integrated with force sensors at plantar foot could relieve foot varus deformity in patients with stroke. *ISPO's 16th World* Congress (International Society for Prosthetics and Orthotics), 8-11 May 2017, Cape Town, South Africa. (Oral). **[Travel Grant]**
36. **Ma CZH***, Ling YT, Lee WCC, Zheng YP. A wearable plantar-force based vibrotactile biofeedback system improving balance of patients with stroke during walking. *The 8th WACBE World Congress on Bioengineering 2017* (World Association for Chinese Biomedical Engineers), 30 July- 2 August 2017, Hong Kong SAR. (Oral).

37. **Ma CZH**, Zheng YP, Lee WCC*. Smart wearable vibrotactile biofeedback systems could enhance balance and gait control in older adults and patients with stroke. *The 11th Beijing International Forum on Rehabilitation*, 2-4 December 2016, Beijing, China. (Oral). **马宗浩**,郑永平,李超俊. 智能可穿戴振动反馈系统可有效提升老年人与中风患者的平衡与步态[C]//第十一届北京国际康复论坛 论文集. 2016:1208-1209.
38. **Ma CZH**, Lee WCC, Zheng YP*. Foot orthosis could improve elderly balance and gait control by changing plantar mechanical stimulations. *Asian Prosthetic and Orthotic Scientific Meeting (APOSM) 2016*, 4-6 November 2016, Seoul, Korea. (Poster).
39. **Ma CZH**, Wong DWC, Wan AHP, Elhadi MMO, Lee WCC*. Different arch supports and metatarsal pads of orthopaedic insoles induce different effects on postural balance. *The 10th Beijing International Forum on Rehabilitation*, 11-13 September 2015, Beijing, China. (Oral). **[Outstanding Paper Award]**
40. **Ma CZ**, Wan AHP, Wong DWC, Zheng YP, Lee WCC*. Insoles and plantar-force based vibrotactile biofeedback system improve elderly standing balance. *2015 Symposium on Biomedical and Rehabilitation Engineering*, 15 May 2015, Hong Kong SAR. (Poster).
41. Elhadi MMO, **Ma CZH**, Wong DWC, Wan AHP, Lee WCC*. Gait changes after long distance walking among healthy elderly people with different walking abilities. *The 10th Beijing International Forum on Rehabilitation*, 11-13 September 2015, Beijing, China.
42. Wan AHP, Wong DWC, **Ma CZH**, Zhang M, Lee WCC*. A new wearable haptic biofeedback device contributes to more successful floor identification in lower-limb amputees. *The 10th Beijing International Forum on Rehabilitation*, 11-13 September 2015, Beijing, China.
43. **Ma CZH**, Wan AHP, Wong DWC., Zheng YP, Lee WCC*. Technologies for enhancing elderly balance. *BME 2014 Biomedical Engineering International Conference*, 4-6 December 2014, Hong Kong SAR. PP A-1. (Oral).

Dissertation

- **Ma CZH.** (2018). *Improving balance and gait using biomechanical and electronic approaches*. Doctoral dissertation. The Hong Kong Polytechnic University.

Invited Conference Talk

1. “Smart active approaches to evaluate and prevent falls of community-dwelling older people”, **Healthy Ageing Conference 2023**, **World Health Organization (WHO) Collaborating Centre (WHO CC) for Community Health Services**, 26-27 October 2023, Hong Kong SAR.
2. “Smart wearable system to improve balance and prevent falls”, **Prosthetic and Orthotic Scientific Meeting 2023**, **International Society for Prosthetics and Orthotics - Hong Kong Society** and **Hong Kong Society of Certified Prosthetist-Orthotists**, 16 September 2023, Hong Kong SAR.
3. “Smart Insole System to Improve Balance and Prevent Falls 提升平衡预防跌倒的智能鞋垫系统”, **The 3rd Asia-Pacific International Rehabilitation Forum 2023 第 3 届亚太国际康复论坛**, 3-6 August 2023, Shenzhen, China.
4. “Prevention and treatment of Idiopathic scoliosis in adolescents in Europe, America, and Hong Kong 欧美与香港地区青少年特发性脊柱侧弯的防控与防治措施”, **2023 “Henan-Hong Kong” Scoliosis**

and Sports Rehabilitation Public Welfare Academic Forum (Seventh Phase) 2023 豫港脊柱侧弯与运动康复公益学术论坛（第七期）, 10-11 June 2023, Zhengzhou, China.

5. “Smart Wearable System with Real-Time Feedback to Improve Human Balance and Walking Ability”, "Assistive Robotic Systems for Human Balancing and Walking: Emerging Trends and Perspectives", **2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2022)**, 23-27 October 2022, Kyoto, Japan.
6. “Smart Insole System to Improve Balance and Prevent Falls”, **The Second Annual Conference of Rehabilitation Assistive Devices Committee of Chinese Association of Rehabilitation Medicine** 中国康复医学会康复辅具应用专业委员会, 20-21 August 2022, Dalian China.
7. “Biomechanical relationship between scoliosis and vertebral wedge deformation 脊柱侧弯与锥体楔形形变的生物力学关系”, **2022 “Henan-Hong Kong” Scoliosis and Sports Rehabilitation Public Welfare Academic Forum (First Phase) 2022 豫港脊柱侧弯与运动康复公益学术论坛（第一期）**, 6 May 2022, Zhengzhou, China.
8. “Scoliosis and Biomechanics of Human”, **The 2nd Annual Conference of Henan Society for Management and Sport Rehabilitation of Ankle-Foot and Spinal Disorders**, 16-17 October 2021, Zhengzhou, China.
9. “iBalanx - Smart Insole for Fall Detection & Prevention”, **Gerontechnology Platform - Theme Based Workshop: Fall Detection & Presentation, The Hong Kong Council of Social Service (HKCSS)**, 26 July 2021, Hong Kong SAR.
10. “Effect and Rehabilitation Engineering Management of Ankle-Foot Deformity on Postural Balance”, **The 1st Annual Conference of Henan Society for Management and Sport Rehabilitation of Ankle-Foot and Spinal Disorders**, 19-20 December 2020, Zhengzhou, China.
11. “Biofeedback in Orthotics: Research and Application”, **Joint Annual Conference of Swedish Board of Prosthetic and Orthotic Agents (Ortopedtekniska Branschrådet, OTB) and Swedish Prosthetics and Orthotics Association (Sveriges Ortopedingenjörers Förening, SOIF)**, 5-6 November 2019, Jönköping, Sweden.

Invited Research Seminar / Salon

1. “Smart Rehabilitation Strategy and Research Progress of Scoliosis 脊柱侧弯的智能康复策略与研究进展”, **National Clinical Research Center for Orthopedics, Sports Medicine & Rehabilitation 国家骨科与运动康复临床医学研究中心**, 23 July 2025, Beijing, China.
2. “Smart Wearable Assistive Technology to Evaluate, Monitor and Improve Balance and Prevent Falls”, **Rehabilitation Research Institute of Singapore, Nanyang Technological University**, 6 May 2025, Singapore.
3. “Balance improvement and fall prevention”, **Sun Yat-Sen University**, 10 December 2024, Shenzhen, China.
4. “Design and application of ankle-foot orthosis in patients with stroke”, **Yunnan University**, 18-22 August 2022, Kunming, China.
5. “Smart Technologies for Assessing and Enhancing Older Adults’ Mobility”, **Research Institute for Smart Ageing (RISA), The Hong Kong Polytechnic University**, 4 May 2022, Hong Kong SAR.

6. “Smart Insole System to Improve Balance and Prevent Falls”, **Research Institute for Intelligent Wearable Systems (RI-IWEAR), The Hong Kong Polytechnic University**, 19 April 2022, Hong Kong SAR.
7. “Ultrasound Imaging for Ageing Related Diseases”, **Research Institute for Smart Ageing (RISA), The Hong Kong Polytechnic University**, 9 April 2022, Hong Kong SAR.
8. “Smart Wearable Technology for Motion Analysis & Improvement: Research and Application”, **Department of Computer Science, Chu Hai College of Higher Education**, 14 May 2020, Hong Kong SAR.

Exhibition

1. “A smart balance perturbation system for fall-risk assessment and balance training”, **Gerontech and Innovation Expo cum Summit (GIES)**, 23-26 November 2023, Hong Kong SAR.
2. “A smart wearable lower-limb sensorimotor training system”, website: https://gies.hk/en/expo/exhibition-products/detail/1369, **Gerontech and Innovation Expo cum Summit (GIES)**, 2-5 November 2022, Hong Kong SAR.
3. “iBalanx: AI-based smart insole with instant reminder to improve balance and prevent falls”, website: https://gies.hk/en/expo/exhibition-products/detail/1369, **Gerontech and Innovation Expo cum Summit (GIES)**, 3-6 November 2021, Hong Kong SAR.

Mentoring Experience

Chief Supervisor of research postgraduate students (PhD / MPhil)

1. WANG Fengyi, **PhD**. *A Novel, Wearable, Ultrasound-Imaging-Based Visual Feedback (UVF) Training Strategy for Improving Muscle Function and Physical Activity of Community-Dwelling Stroke Survivors*. (Enrolled on 2 September 2024, ongoing, PolyU). **[3+1 incentive]**.
2. LUO Yuyan Laura, **PhD**. *A Novel Non-Surgical Management of Adolescent Idiopathic Scoliosis Using Digitalized 3D Spinal Correction and Ultrasound Imaging Assessment*. (Enrolled on 4 September 2023, study registration confirmed on 17 July 2025, ongoing, PolyU). **[3+1 competitive]**.
3. LIU Wei, **PhD**. *Bilateral ankle muscle morphological patterns during natural, orthotic-corrected, or robotic-assisted walking in stroke survivors with footdrop*. (Enrolled on 10 January 2022, study registration confirmed on 18 December 2023, ongoing, PolyU).
4. LI Kejing, **PhD**. *Investigating the kinematics, kinetics, and muscle function of fallers/non-fallers with/without sarcopenia during balance tasks*. (Enrolled on 30 August 2021 as MPhil, transferred to PhD and study registration confirmed on 23 December 2022, ongoing, PolyU).
5. ZHU Tanglong Ringo, **PhD**. *Exploring mechanism of falls and fall-prevention strategies in older fallers and older non-fallers with neuromuscular, sonographic and biomechanical analysis*. (Enrolled on 7 September 2020 as MPhil, transferred to PhD and study registration confirmed on 21 July 2021, thesis submitted on 30 August 2024, viva passed on 23 April 2025, graduated on 18 June 2025, PolyU). [Current affiliation: The Southwest Hospital of Army Medical University (AMU)].

Co-supervision of research staff / students (Post-doctoral Fellow / EngD / PhD / MPhil)

6. JIE Yi, EngD. A System with Distraction and Lateral Force Application for Correction of Spinal Deformity – Design and Clinical Evaluation Study. (Enrolled on 30 August 2021, thesis submitted on 6 March 2025, viva passed on 8 July 2025, PolyU).
7. HUANG Chen Cece, **Postdoc**. Intelligent Wearable System for Impact Safety Protection and Real-Time Monitoring. (May 2023 – April 2024, PolyU).
8. YAN Jin, **PhD**. Wearable sensing of temperature and muscle activation in patients with knee osteoarthritis. (Enrolled on 29 August 2022, PolyU).
9. Chung Kai Lun Alan, **EngD**. Cloud-Based Wearable Plantar Force Sensing and Feedback System. (Awarded November 2020, PolyU).

Chief Supervisor of taught postgraduate students (MSc)

10. PANG Min, **MSc**. *A Novel Wearable Ultrasound Imaging Visual Feedback Training Strategy to Enhance Muscle Function and Physical Activity in Community-Dwelling Stroke Survivors: A Randomized Controlled Trial*. (ongoing, PolyU).
11. LIANG Haobin, **MSc**. *Differences in Trunk Muscle Responses to Unexpected Balance Perturbations Between Elderly Fallers and Elderly Non-Fallers: A Combined Ultrasound and EMG Study*. (Awarded January 2025, PolyU).
12. LI Junzhe, **MSc**. *Identifying biomechanical and physiological parameters for fall prevention in the older people with wearable devices and artificial intelligence*. (Awarded July 2024, PolyU).
13. HUNG Tim Mei, **MSc**. *The kinematic and muscular response of older fallers and older non-fallers under translational balance perturbation*. (Awarded July 2023, PolyU) **[UGC Targeted Taught Postgraduate Programmes Fellowships Scheme, University Grants Committee, Hong Kong SAR Government]**.

Chief Supervisor of undergraduate students with theses (BSc)

14. NG Pak San, **BSc**. *In muscle morphology comparison between walking with and without ankle-foot-orthosis in stroke patients*. (Awarded July 2024, PolyU).
15. LAM Wing Yang Michael, **BSc**. *Investigating Mechanism of Falls in Older Individuals from Muscle Activity Perspective by An Innovative Wearable Ultrasound Imaging System: A Pilot Study*. (Awarded July 2023, PolyU).
16. WONG Lok Yi Nicky, **BSc**. *A Reliability and Validity Study of using Waist-attached Inertial Measurement Unit (IMU) to Evaluate the Falling Risk of Older People*. (Awarded July 2023, PolyU).
17. WONG Hok Man Leon, **BSc**. *Proactive Companion Robot*. (Awarded July 2022, PolyU). **[Champion of Best Project Award, FENG Inter-departmental Final Year Project 2021-22, Faculty of Engineering, PolyU]**.
18. TONG Cheuk Ying Charmaine, **BSc**. *Lower-Limb Muscle Activities When Maintaining Static Balance in Young and Old adults*. (Awarded July 2022, PolyU). **[Service-Learning Scholarship - FYP / Capstone Project, Service-Learning and Leadership Office, PolyU]**.
19. SEISEKHANOV Dias, **BSc**. Portable ultrasound imaging device for investigation of the skeletal muscle activity of patients with stroke. (Awarded November 2021, PolyU).

20. THUNBERG Vilma, **BSc**. *In vivo* muscle morphology comparison between walking with and without ankle-foot orthosis. (Awarded June 2020, Jönköping University).
21. JANSSON Anna, **BSc**. *In vivo* muscle morphology comparison between walking with and without ankle-foot orthosis. (Awarded June 2020, Jönköping University).
22. KARLSSON Sofi, **BSc**. Development and preliminary validation of a new brace appearance questionnaire. (Awarded June 2019, Jönköping University).
23. THÓRARINSDÓTTIR Thórkatla Dagný, **BSc**. Development and preliminary validation of a new brace appearance questionnaire. (Awarded June 2019, Jönköping University).
24. HERMANSSON Erik, **BSc**. A material study of insoles manufactured using different methods. (Awarded June 2019, Jönköping University).
25. EKBERG Marcus, **BSc**. A material study of insoles manufactured using different methods. (Awarded June 2019, Jönköping University).

Service

Internal Service

Departmental Service

- Coordinator, Research Seminar, PolyU BME (Since January 2025).
- Coordinator, Engineering Doctorate (EngD) Programme, PolyU BME (September 2023-August 2024).
- Member (representing Assistant Professors), Departmental Research Committee (DRC), PolyU BME (September 2023-August 2024).
- Member, Departmental Health, Safety and Environment Committee (DHSEC), PolyU BME (Since September 2023).
- Duty function of supporting oversea P&O service trip: To support PolyU BME students and alumni to provide community services to the children with cerebral palsy, Guangdong Work Injury Rehabilitation Hospital, Guangzhou, China. PolyU BME (2023/05/15-2023/05/24).
- Working Group Member, Henan – Hong Kong Joint Research Center for Diagnosis and Physical Rehabilitation of Scoliosis 豫港脊柱侧弯诊疗与运动康复联合研究中心, PolyU BME (2023/01/01-2027/12/31).
- Contact Person, Promotion of MSc program in Rehabilitation Engineering in mainland China, PolyU BME (since 2021).
- Interview Panel Member, candidates of Project Associate/Assistant of Jockey Club Smart Ageing Hub, PolyU BME (since February 2022).
- Interview Panel Member, candidates of Senior Scientific Officer / Scientific Officer of Jockey Club Smart Ageing Hub, PolyU BME (since August 2021).
- Interview Panel Member, candidates of BSc program in Biomedical Engineering from Mainland China, PolyU BME (since 2021).
- Interview Panel Member, candidates of MSc program in Biomedical Engineering, PolyU BME (since 2021).
- Contact Person, Prosthetic and Orthotic (P&O) program between Jönköping University and PolyU, Jönköping University (2019-2020).

Faculty Service

- Member, Faculty Engineering Doctorate (EngD) Programme Committee, PolyU FENG (September 2023-August 2024).
- Working Group Member, Development of Ageing Data Registry System (ADRES), Research Institute of Smart Ageing (RISA), PolyU (since April 2022).
- Member, Research Institute for Sports Science and Technology (RISports), PolyU (since 2022).
- Member, EngD Student/ Staff Consultative Group (SSCG) meeting, Faculty of Engineering (FENG), PolyU (since 2022).
- Member, Research Institute for Smart Ageing (RISA), PolyU (since 2021).

University Service

- Hearing Committee Member, Student Resources and Support Section, Student Affairs Office (SAO), PolyU (since December 2021 - January 2022).
- Residential Fellow, College of Undergraduate Researchers and Innovators (CURI) Residential College (CURI RC), PolyU (August 2021 - August 2022).

Editors / Reviewers

Reviewer of Research Grant / Fellowships / Scholarships

- Doctoral Fellowship Programme, Austrian Academy of Sciences (since 2019).

Editorship of Journals

- Guest Associate Editor in Movement Disorders, *Frontiers in Neurology* (since 2022).

Guest Editor of Journal Special Issues

- *Bioengineering – "Biomechanics and Motion Analysis"* (**Q2**, 2022 JCR IF=4.6, Rank 34/96 in Engineering, Biomedical). (2024-25).
- *BMC Musculoskeletal Disorders – "Prosthetics and Orthotics"* (**Q2**, 2022 JCR IF=2.3, Rank 42/86 in Orthopedics). (2023-24).
- *Frontiers in Sports and Active Living – "Strategies in Improving and Encouraging Walking among Older Adults"* (**Q2**, 2022 JCR IF=2.7, Rank 48/121 in Sport Sciences). (2023-24).
- *Bioengineering – "Biomechanics-Based Motion Analysis, Volume II"* (**Q2**, 2022 JCR IF=4.6, Rank 34/96 in Engineering, Biomedical). (2023-24).
- *Frontiers in Neurology – "Balance-Controlling Mechanism and Fall-Prevention Strategy"* (**Q2**, 2021 JCR IF=4.086, Rank 88/212 in Clinical Neurology). (2022-24).
- *Bioengineering – "Biomechanics-Based Motion Analysis"* (**Q2**, 2021 JCR IF=5.046, Rank 53/115 in Engineering, Biomedical). (2022-23).

Editorial Board Member of Journals

- *Medical Reference* (*MedRef*) 医学参考报 (since 2025).
- *Biosensors* (Early Career Editorial Board Member, since 2025).
- *BMC Musculoskeletal Disorders* (since 2021).

Reviewer of Journals (in alphabetical order, ≥30)

- *Acta Neurologica Belgica*
- *Age and Ageing*
- *Applied Sciences*

- *Biomedical Signal Processing and Control*
- *Bioengineering*
- *Biosensors*
- *BMC Musculoskeletal Disorders*
- *Clinical Ergonomics*
- *Clinical Interventions in Aging*
- *Disability and Rehabilitation*
- *Frontiers in Neurology*
- *Frontiers in Sports and Active Living*
- *Gerontology*
- *Healthcare*
- *IEEE Journal of Biomedical and Health Informatics*
- *IEEE Transactions on Neural Systems and Rehabilitation Engineering*
- *IEEE Transactions on Robotics*
- *International Journal of Environmental Research and Public Health*
- *Journal of Biomechanics*
- *Journal of Clinical Neuroscience*
- *Journal of Healthcare Engineering*
- *Journal of Heart and Stroke*
- *Journal of Orthopaedics, Trauma and Rehabilitation*
- *Journal of the Neurological Sciences*
- *JOR Spine*
- *Medical Engineering and Physics*
- *PM&R (official scientific journal of the American Academy of Physical Medicine and Rehabilitation)*
- *Plos One*
- *Scientific Reports*
- *Sensors*
- *Somatosensory & Motor Research*
- *Sustainability*
- *Topics in Stroke Rehabilitation*
- *Ultrasonic Imaging*

Reviewer of Conferences

- Healthy Ageing Conference 2023, World Health Organization (WHO) Collaborating Centre (WHO CC) for Community Health Services (2023).
- 15th International Convention on Rehabilitation Engineering and Assistive Technology (i-CREATe 2022).
- IEEE World Haptics Conference 2021 (WHC)
- The Third International Conference on Biological Information and Biomedical Engineering (BIBE 2019).

Service to Professional & Scientific Associations

International

- Scientific Abstract Selection Committee Member, Healthy Ageing Conference 2023, World Health Organization (WHO) Collaborating Centre (WHO CC) for Community Health Services, 26-27 October 2023, Hong Kong SAR (2023).

- Moderator and Scientific Committee Member, 15th International Convention on Rehabilitation Engineering and Assistive Technology (i-CREATe 2022), 26-29 August 2022, Hong Kong SAR (2022).
- ISPO Auditor, Education Committee – Accreditation Sub-Committee, International Society for Prosthetics and Orthotics (ISPO) (since March 2022). Audited P&O programs:
  - BSc Programme in Prosthetics and Orthotics offered by Capital Medical University, Beijing, China; May-June 2022.
- Member, CGFNS Global Rehabilitation Health Worker Certification Initiative, United Nations Economic and Social Council (ECOSOC) (since 2021).
- Editor and Translator, Chinese version of ISPO E-Update (ISPO bi-monthly newsletters), International Society for Prosthetics and Orthotics (ISPO) (2014-2018).
- Conference Organization Committee Member, The 7th Beijing International Forum on Rehabilitation (2012).

National

- Committee Member, Chinese Association of Rehabilitation Medicine - Rehabilitation Medicine Education Committee 中国康复医学会-康复医学教育专业委员会-委员 (2024-2029).
- Executive Committee Member, China Association of Assistive Products (CAAP) – Foot Assistive Products Sub-society 中国康复辅助器具协会-足部辅具专业委员会-常委 (2023-2028).
- Conference Organization Committee Member, The 6th National Congress of the China Disabled Persons Federation 中国残联第六次全国代表大会-会务组成员 (2013).

Regional / Local

- Lecturer, Commissioned Training Program 2023/24 to Prosthetists & Orthotists on “Pediatric Gait Analysis and Orthotic Management: An Evidence Based”, Institute of Advanced Allied Health Studies, Hospital Authority (HA), Hong Kong SAR (2024/01/11-2024/01/12).
- Prosthetist & Orthotist, Jockey Club Children’s Spine Care Community Project, Jockey Club Rehabilitation Engineering Clinic, Department of Biomedical Engineering, The Hong Kong Polytechnic University, Hong Kong SAR (2023-present).
- Founding Member, Henan – Hong Kong Joint Research Center for Diagnosis and Physical Rehabilitation of Scoliosis 医工融合 - 豫港脊柱侧弯诊疗与运动康复联合研究中心 (2023/01/01-2027/12/31).
- Founding Academic Committee Member, Henan Society for Management and Sport Rehabilitation of Ankle-Foot and Spinal Disorders 河南省足踝和脊柱异常矫治与运动康复专委会-学术委员会专家组 委员 (Since 2020).
- Conference Organization Committee Member, Jockey Club Smart Aging Hub: Opening Ceremony & Symposium, PolyU (2018).

Professional Membership

- Committee Member, Chinese Association of Rehabilitation Medicine - Rehabilitation Medicine Education Committee 中国康复医学会-康复医学教育专业委员会-委员 (M1900013034MS, Since 2024).

- Executive Committee Member, China Association of Assistive Products (CAAP) – Foot Assistive Products Committee 中国康复辅助器具协会-足部辅具专业委员会-常委 (2023-2028).
- Founding Member, HKMHDIA BME Industrial Alumni Association, Hong Kong Medical and Healthcare Device Industries Association (HKMHDIA) (Since 2022).
- Member, International Society for Prosthetics and Orthotics (ISPO, N10958) (Since 2016).
- Member, World Association for Chinese Biomedical Engineers (WACBE) (Since 2015).
- Member, Chinese Association of Rehabilitation Medicine 中国康复医学会 (M1900013034M, M196600002A) (Since 2016).
- Member, Chinese Society of Biomedical Engineering - Rehabilitation Engineering Sub-society 中国生物医学工程学会-康复工程分会-会员 (Since 2015).