14th
i-CREATe
2020
CONFERENCE
international Convention on Rehabilitation
Engineering & Assistive Technology
REAT Light Up Lives
Dec 01 – 05 2020 gSIC Session
Dec 05 – 07 2020 Conference Session
2020 International Convention on Rehabilitation Engineering and Technology

Opening Address for i-CREATe 2020

It is my great honor to host the 2020 International Convention on Rehabilitation Engineering and Technology (i-CREATe 2020), which promotes the development of assistive technology, increases the quality of life of the elderly and people with
disabilities and enhances their independence and social participation.

2020 is a very special year.We are experiencing a tremendous pandemic impact, which greatly changes our life. The COVID-19 makes it impossible for you to attend i-CREATe2020 inTaiwan. We kindly appreciate your understanding that iCRETATe2020 can be held by virtual styleonly due to severely ongoing pandemic outbreak.

The 14th annual conventioni-CREATe2020 provides the global student innovation challenge (gSIC) ,scientific program, a series of academic activities, workshop, and industry exhibition. Key-opinion leaders from around the world share their ideas and experiences.This isanimportant event ofRehabilitation Engineering and Assistive Technology globally. It provides an opportunity to renew the interpersonal relationships by an online platform also encourages and facilitates cooperation between participants.

i-CREATe 2020 is hosted byTaiwan Rehabilitation Engineering and Assistive echnology Society(TREATS). TREATS is awell-organized society, which integrates talents,international resources, markets, technology. It develops and promotes potential products in response to global market needs for the elderly and people with disabilities. It integrates professionals to make important policy and strategy.
It promotes healthcare service and Industry-Academy Cooperation, and etc.

We are welcoming you. Your participation, support, and feedback are important for making i-CREATe 2020 a wonderful and memorable event.

Shih-Ching Chen

Shih-Ching Chen, M.D., Ph.D.
General Chair of i-CREATe 2020
President, Taiwan Rehabilitation Engineering and Assistive Technology Society (TREATS)
Professor, Taipei Medical University, Taipei, Taiwan

i-CREATe 2020 International Organization Committee

Host Organizers
Coalition of Rehabilitation Engineering and Assistive Technology, Asia (CREATe Asia)
Taiwan Rehabilitation Engineering and Assistive Technology Society
Taipei Medical University

General Chair
Shih-Ching Chen, Taipei Medical University, Taiwan

General Co-Chair
Chih-Wei Peng, Taipei Medical University, Taiwan

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Chapal Khasnabis (World Health Organization, WHO)
Friedbert Kohler (HammondCare, Australia)
Guoen Fang (Chinese Association of Rehabilitation Medicine, China)
Pairash Thajchayapong (National Science and Technology Development Agency in Thailand, Thailand)
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WeiTech Ang (Nanyang Technological University, Singapore)

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Jiunn-Horng Kang, Taipei Medical University, Taiwan
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Jung KIM, Korea Advanced Institute of Science and Technology, South Korea

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Chien-Hung Lai, Taipei Medical University, Taiwan

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Ya-Ting Yang, Taipei Medical University, Taiwan

Administration Co-Chair
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Local Arrangement
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Congo Tak-Shing Ching, National Chung Hsing University, Taiwan
Jen-Yuan Chang, Department of Power Mechanical Engineering, Taiwan
Peng-Da Liu, Changhua Christian Hospital, Taiwan

Scientific Program Committee

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Chien-Hung Lai, Taipei Medical University, Taiwan
Chih-Hsiu Cheng, Chang Gung University, Taiwan
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Tsung-Hsun Hsieh, Chang Gung University, Taiwan
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Wen Ren Chien, Cathay General Hospital, Taiwan
Wen-Shan Jian, Taipei Medical University, Taiwan
Willy Chou, Chi Mei Medical Center, Taiwan
Yu-Luen Chen, National Taipei University of Education, Taiwan

Award Chair

Shih-Chung Chen, Southern Taiwan University of Science and Technology, Taiwan

Special Session Chair

Yi-Hsin Hsu, Taipei Medical University, Taiwan

Registration Chairs

Ya-Ting Yang, Taipei Medical University, Taiwan

Global Student Innovation Challenge (gSIC)

gSIC Chairs

Ta Chieh (Jerry) Hsu, Taiwan Rehabilitation Engineering and Assistive Technology Society, Taiwan

Chief Judge

Jia-Jin Chen, National Cheng Kung University, Taiwan
Tung-Wu Lu, National Taiwan University, Taiwan

Judges

Jiunn-Horng Kang, Taipei Medical University, Taiwan
Kavin Karunratanakul, National Metal and Materials Technology Center, Thailand
Piyawut Srichaikul, National Electronics and Computer Technology Center, Thailand
Robyn Chapman, Assistive Technology Australia, Australia
DuoJin Wang (University of Shanghai for Science and Technology, China)
Simon Wong, Hong Kong Occupational Therapy Association, Hong Kong, China
Yuichiro Honda, Robot Rehabilitation Center in Hyogo Rehabilitation Center, Japan

Secretariat

Jin-Quan, Er, Taipei Medical University, Taiwan
Pei-Lin Lee, Taipei Medical University, Taiwan
Pui-Chi Lou, Taipei Medical University, Taiwan
Yi-Jing Huang, Taipei Medical University, Taiwan

Preparation Committee Introduction

General Chair: Professor Shih-Ching Chen

Current Positions:

Director, Research Center of Rehabilitation Engineering and Assistive Technology, Taipei Medical University
Deputy Dean, College of Medicine, Taipei Medical University
President, Taiwan Rehabilitation Engineering and Assistive Technology Society
Professor, Taipei Medical University

Education:

Ph.D., Graduate School of Medicine, Tohoku University, Japan.

Research Interests:

Rehabilitation Engineering and Assistive Technology, Rehabilitation Medicine, Rheumatology, Sleep Medicine

General Co Chair: Professor Chih-Wei Peng

Current Positions:

Director, School of Biomedical Engineering, Taipei Medical University
Professor, School of Biomedical Engineering, Taipei Medical University
Supervisor, Board of Supervisors, Taiwanese Society of Biomedical Engineering
Deputy Director, Research Center of Rehabilitation Engineering and Assistive Technology, Taipei Medical University

Education:

PhD, Biomedical Engineering, National Cheng Kung University

Research Interests:

Neural engineering, Assistive technology, Physical therapy, Medical engineering, Rehabilitation engineering, Neuromodulation, Electrical physiology, Electromyograms

Program Chair: Professor Shih-Chung Chen

Current Positions:

Southern Taiwan University of Science and Technology, Taiwan

Education:

Ph. D., Institute of Electrical Engineering, National Cheng-Kung University, Taiwan

Research Interests:

Design of Advanced High Tech Assistive Device, Brain Computer Interface (BCI) Control, Microcontroller Control, Application of Image Processing, Design of Medical Instrumentation

Program Co-Chair: Professor Hsin-Yi Kathy Cheng

Current Positions:

Associate prof., Graduate Institute of Early Intervention, Chang Gung University, Taiwan
Director, Center of Innovation and incubation, Chang Gung University, Taiwan

Education:

Ph. D., Institute of Mechanical Engineering, Chang Gung University, Taiwan

Research Interests:

Motor control and learning, Neuroscience, Balance and postural control, Exercise design & training for normal & disabled children

Program Co-Chair: Professor Pei-Shan Yang

Current Positions:

Professor and Chair., Department of Social Work, National Taiwan University, Taiwan
Education:
Ph. D., School of Social Work, Columbia University

Research Interests:

Gerontology social work, Community Resources Management

Publicity Chair: Professor Chih-Hsiu Cheng

Current Positions:

Professor, School of Physical Therapy and Graduate Institute of Rehabilitation Science
Deputy secretary general, Taiwan Physical Therapy Association
Editor, Physical Therapy Reviews

Education:

PhD, Department of Biomedical Engineering National Taiwan University, Taiwan

Research Interests:

Motion Analysis, Neuromuscular Control, Muscle, Posture, Neck Pain, Electromyography, Physiotherapy, Biomechanics, Exercise

Finance Chair: Associate Professor Jiunn-Horng Kang

Current Positions:

Vice Director, TMU Research Center of Artificial Intelligence in Medicine and Health(TAIMH), Taipei Medical University
Director, Department of Physical Medicine and Rehabilitation, Taipei Medical University Hospital
Director, Professional Master Program in Artificial Intelligence in Medicine, Taipei Medical University
Director, Department of Physical Medicine and Rehabilitation, School of Medicine, Taipei Medical University
Associate Professor, Department of Physical Medicine and Rehabilitation, School of Medicine, Taipei Medical University

Education:

PhD, Biomedical Engineering, National Taiwan University, Taiwan

Research Interests:

Pain medicine, Electrophysiology, Neuroscience, Nonlinear analysis

Exhibition Chair: Associate Professor Chien-Hung Lai

Current Positions:

PhD, biomedical engineering, Chung Yuan Christian University, Taiwan

Current Positions:

Associate Professor, School of Medicine,Taipei Medical University
Executive director,Taiwan Rehabilitation Engineering and Assistive Technology Society
Director, PM&R department, Taipei Medical University Hospital
Associate Professor, School of Medicine, Taipei Medical University

Education:

PhD, Biomedical Engineering, National Taiwan University, Taiwan

Research Interests:

Neurological Rehabilitation, Orthopedic Rehabilitation, Medical engineering, Rehabilitation Engineering/Assistive Technology

Social Activity Chair: Professor Ta-Sen Wei

Current Positions:

Director, Department of Physical Medicine and Rehabilitation, Changhua Christian Hospital, Taiwan
Current Positions:
Professor, Graduate Institute of Early Intervention, China Medical University, Taiwan
Education:
PhD, Biomedical Engineering, National Taiwan University, Taiwan
Research Interests:
Rehabilitation Medicine, Balance or gait disorders between children and the elderly, Medical engineering, Rehabilitation Engineering/Assistive Technology

Administration committee Chairs: Yi-Hsin Hsu

Current Positions:

Professor, Department of BIOTECH EMBA, Taipei Medical University, Taiwan

Current Positions:

Professor, College of Management, Taipei Medical University, Taiwan

Education:

PhD, Industrial Engineering and Management, University of Wisconsin

Research Interests:

Health Care Administration, Management Science / Operations Research, Healthcare Administration Ethics, Healthcare Quality

i-CREATe 2020 Program Agenda

Global Student Innovation Challenge (gSIC) Program

Date	Time(GMT+8)	Detail
Nov 22~ Nov 29	00:00~23:59	Teams upload video files
Dec 03	07:00-09:59 am	Technology Category Live Online Q&A Session
Dec 04	07:00-09:59 am	Design Category Live Online Q&A Session
Dec 05	Before 17:00	Announcement of winners

Conference Program

December 5, 2020 (Saturday)

Time (Min)	Topics	Speakers
08:50-09:00	Opening ceremony	Pro. Shih-Ching Chen
09:00-09:40	**Keynote Speech I** Global Cooperation in Assistive Technology	Prof. Evert Jan Hoogerwerf & Prof. Luc de Witte
09:40-10:20	**Keynote Speech II** Global Cooperation in Assistive Technology	Prof. Evert Jan Hoogerwerf
10:20-10:40	Break	
10:40-11:20	**Plenary Speech I** Engineering Technology for Rehabilitation	Prof. Congo Tak-Shing Ching 程得勝教授
11:20-12:00	**Plenary Speech II** Assistive Technology for Children with Disabilities in School Environment-Assessments and Resources in Taiwan	Prof. Hsin-Yi Kathy Cheng 程欣儀教授
Lunch Break		
13:30-15:00	Workshop I / Workshop II	Poster / Exhibition
15:00-16:30	Workshop III / Workshop IV	Poster / Exhibition
Close of Conference Day 1		

December 6, 2020 (Sunday)

Time (Min)	Topics	Speakers
09:00-10:00	**Keynote Speech III** My Journey with Assistive Technology	Prof. Mary Ellen Buning
10:00-10:40	**Keynote Speech IV** Emerging Technologies and Their Potential for the AT Field; A Review of the Literature and Recent Patent Applications	Prof. Luc de Witte
10:40-10:50	Break	
10:50-11:30	**Plenary Speech III** Emerging Technology of Cyber-Physical Systems and Human-Machine Interaction for Healthcare and Medical Assistive Applications	Prof. Feng-Li Lian 連豊力教授
11:30-12:10	**Plenary Speech IV** Technology Development & Application of Robotics in Rehabilitation Medicine	Prof. Jen-Yuan Chang 張禎元教授
Lunch Break		
13:30-15:00	Workshop V / Workshop VI	Oral Presentation / Exhibition
15:00-16:30	Workshop VII / Workshop VIII	Oral Presentation / Exhibition
Close of Conference Day 2		

December 7, 2020 (Monday)

Time (Min)	Topics	Speakers
09:00-09:40	**Keynote Speech V** The Future of Assistive Technology: Economical, Smart, and Global	Prof. Roger O. Smith
09:40-10:20	**Keynote Speech VI** In-silico Rehabilitation	Prof. Cyril J.W Donnelly
10:20-10:40	Break	
10:40-11:20	i-CREATe Board Meeting	
Conference Close		

i-CREATe 2020 Speaker Introduction

Keynote Speaker

Keynote Speaker

Professor Evert Jan Hoogerwerf

Current Position

Head of the Sector Assistive Technology at AIAS Bologna onlu
President of The Global Alliance of Assistive Technology Organizations

Education

Degree in Communication Science of the University of Amsterdam

Professional Background

Head of the Regional Centre for Assistive Technology of the Region Emilia-Romagna (Italy)
Director of the “We Care More” Centre for Research and Innovation of AIAS Bologna (Italy)
Secretary-General of the Global Alliance of Assistive Technology Organizations

Specialized Field

Assistive Technology, AT Education, Digital Health, Integrated Care, Social Inclusion

Honors and Awards

AAATE Diamond Award Holders

Memberships

Association for the Advancement of Assistive Technology in Europe (AAATE)
European Association of Service Providers to Persons with Disabilities (EASPD)

Keynote Speaker

Professor Luc de Witte

Current Position

Chair in Health Services Research in Catch, Centre for Assistive Technology and Connected Healthcare, University of Sheffield, South Yorkshire, England

Education

Medical degree in 1983
PhD in 1991

Professional Background

I am trained as a medical doctor but have always worked in research and development. Initially my focus was on clinical research in rehabilitation but my attention gradually shifted to long term care, including elderly care, care for people with chronic diseases and disability care. Since 2007 my focus has been on the application of technology in these care sectors. During the past 10 years I became increasingly involved in international research, with a focus on low- and middle-income settings. Currently I am president of the Global Alliance of Assistive Organizations (GAATO) and I am past president of the Association of the Advancement of Assistive Technology in Europe (AAATE)

Specialized Field

Assistive Technology; Rehabilitation; Digital Healthcare; Global Health

Memberships

Active member of the AAATE

Keynote Speaker

Professor Mary Ellen Buning

Current Position

Past President of Rehabilitation Engineering and Assistive Technology Society of North America Board of Directors

Education

Doctor of Philosophy in Rehabilitation Science, School of Health and Rehabilitation Sciences, University of Pittsburgh
Doctoral Studies, Vocational Education Special Needs, School of Occupational and Educational Studies, Colorado State University

Board Certification and Licensure

National Board for Certification of Occupational Therapy, Occupational Therapist Registered
RESNA (Rehabilitation Engineering and Assistive Technology Society of North America) Certifications: Assistive Technology Professional (ATP) (since 1998) and Seating and Mobility Specialist (SMS) (Since 2012)
Kentucky Board of Licensure Occupational Therapy, License

Honors and Awards

Meritorious Service Award Board of Trustees, American Occupational Therapy Foundation (AOTF), April.
Named a Fellow of the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) on June 13, 2015, Denver CO
SHADES of Genius Award: Metropolitan State College of Denver

Professional Memberships and Activities

American Occupational Therapy Association, Bethesda, MD, Registered OT
Board of Directors, Rehabilitation Engineering and Assistive Technology Society of North America (RESNA). Washington, DC
Disabled Sports/USA, member
RESNA Board of Directors. Chair: Professional Specialty Groups. Member: Education, Nominations, Awards & Membership committees
RESNA Past President
RESNA Wheelchair Transportation Standa

Keynote Speaker

Professor Roger O. Smith

Current Position

Professor, Rehabilitation Research Design & Disability Center
Director, University of Wisconsin-Milwaukee

Education

Ph.D. in Human Factors and Health Systems Engineering, Department of Industrial Engineering, University of Wisconsin-Madison, 1993.
Master of Occupational Therapy, University of Washington, Seattle, Washington, 1980.
Bachelor of Arts, Goshen College, Goshen, Indiana, 1976. Psychology with a co-major in Communications.

Professional Background

Occupational Therapy
Rehabilitation Administration
Research Administration

Specialized Field

Assistive Technology Outcomes and Measurement Methods
Accessibility Outcomes and Measurement Methods

Honors and Awards

Appreciation Award, RESNA, Rehabilitation Engineering and Assistive Technology Society of North America, 2020

Memberships

Member, (Co-Chair 2016-2019), Board of Directors on Accreditation of Rehabilitation Engineering and Assistive Technology Education (RESNA CoA-RATE), 2016-present
Alternate Board Member (representing RESNA), Global Alliance of Assistive Technology Organizations (GAATO), 2020-21.
Co-chair, International Alliance of Assistive Technology Organizations/Global Alliance of Assistive Technology Organizations (IAATO/GAATO) Board, 2019-2020.
Immediate Past-President, Rehabilitation Engineering and Assistive

Keynote Speaker

Professor Cyril John William Donnelly

Current Position

Principal Research Fellow & Program Principal Investigator, Rehabilitation Research Institute of Singapore, Nanyang Technological University.

Education

Doctorate of Philosophy (Sport Science, Exercise & Health – Biomechanics) University of Western Australia, Faculty of Life and Physical Science.
Master of Science (Kinesiology - Biomechanics) University of Waterloo, Faculty of Applied Health Science.
Bachelor of Kinesiology (Honors), McMaster University, Faculty of Social Science.

Specialized Field

Clinical and Sport Biomechanics, Musculoskeletal Modelling, Injury/ Disease Management

Professional Background

Principal Research Fellow & Program Principal Investigator, Rehabilitation Research Institute of Singapore, Nanyang Technological University.
Founder & Chief Executive Officer/ Chief Scientific Officer, Body Composition Technologies Ltd Pte, Singapore.
Director, Body Composition Technologies Ltd Pty, Perth, Western Australia.

Honors and Awards

Adjunct Associate Professor (Senior Lecturer), School of Human Sciences, the Faculty of Science, the University of Western Australia.
Visiting Assistant Professor, Department of Mechanical, Aerospace & Biomedical Engineering, College of Engineering, the University of Tennessee.

Memberships

International Society of Biomechanics (ISB)
International Society of Biomechanics in Sport (ISBS)

i-CREATe 2020 Speaker Introduction

Plenary Speaker

Professor Congo Tak-Shing Ching

Current Position

Head of Graduate Institute of Biomedical Engineering, National Chung Hsing University

Education

PhD in Bioengineering, University of Strathclyde, Glasgow, UK, 2005
MPhil in Biomedical Engineering, the Hong Kong Polytechnic University, HK, 2002
BSc in Prosthetics and Orthotics (First Class Honors), the Hong Kong Polytechnic University, HK, 1999

Professional Background

Honorary Professor in Department of Health and Physical Education, the Education University of Hong Kong, Hong Kong
Professor in Department of Electrical Engineering, National Chi Nan University, Taiwan

Specialized Field

Biomedical Instrumentation Design, Biomedical Electronics, and Assistive Technology

Honors and Awards

Outstanding Service Teacher Award awarded by the College of Engineering, National Chung Hsing University, Taiwan, 2020
Mentor Model Award awarded by the College of Engineering, National Chung Hsing University, Taiwan, 2018
Outstanding Young Teacher Award awarded by the College of Engineering, National Chung Hsing University, Taiwan, 2017

Memberships

Member, Prosthetics and Orthotics Society of Taiwan, since 2016
Member, Association of Chemical Sensors in Taiwan, since 2015
Member, Taiwan Rehabilitation Engineering and Assistive Technology Society, 2013
Member, The Chinese Institute of Engineers, Since 2013

Plenary Speaker

Professor Hsin-Yi Kathy Cheng

Current Position

Head of Graduate Institute of Biomedical Engineering, National Chung Hsing University

Education

PhD. in Mechanical Engineering, Chang Gung University, Taiwan
MS. in Motor Control and Learning, University of Pittsburgh, USA
BS. in Physical Therapy, National Taiwan University, Taiwan

Professional Background

Professor, Graduate Institute of Early Intervention, Chang-Gung University, Tao Yuan, Taiwan
Associate Professor, Graduate Institute of Early Intervention, Chang-Gung University, Tao Yuan, Taiwan
Assistant Professor, Graduate Institute of Early Intervention, Chang-Gung University, Tao Yuan, Taiwan
Physical Therapist, Pittsburgh Specialty Hospital (by Allegheny Cheaspeake PT Co.), Pittsburgh, PA, USA

Specialized Field

Rehab Engineering/Assistive Technology/Biomechanics /Movement Science

Honors and Awards

Most 2015 Annual Outstanding Young Scholars Research Project

Memberships

Board director, Global Alliance of Assistive Technology Organization (GAATO)
Board member, TREATS
Board member, Taiwan Society of Biomechanics

Plenary Speaker

Professor Feng-Li Lian

Current Position

Professor, National Taiwan University, Electrical Engineering

Education

Ph.D., University of Michigan, Ann Arbor, MI, USA, 2001
M.S., National Taiwan University, Taipei, Taiwan, 1994
B.S., National Taiwan University, Taipei, Taiwan, 1992

Professional Background

Professor, National Taiwan University, Taipei, Taiwan.
Chief Technology Officer, Mechanical and Mechatronics Laboratory, Industrial Technology Research Institute, Hsinchu, Taiwan.
Postdoctoral Scholar, California Institute of Technology, Pasadena, CA, USA.

Specialized Field

Automatic Control, Autonomous Driving, Robotic Motion Planning

Honors and Awards

2012, Dr. Wu, Da-You Memorial Research Award, National Science Council, Taiwan
2012-14, Excellent Young Scholar Research Grant, National Science Council, Taiwan
2007-08, 2010-13, 2018-19, Excellent Teaching Award, National Taiwan University
2012, Outstanding Youth Award, Taiwan Assoc. of System Science & Engineering
2007, Youth Automatic Control Engineering Award, Chinese Automatic Control Society, Taiwan

Memberships

Institute of Electrical and Electronic Engineers
Taiwan Assoc. of System Science & Engineering
Chinese Automatic Control Society, Taiwan
Robotics Society of Taiwan

Plenary Speaker

Professor Jen-Yuan Chang

Current Position

Department of Power Mechanical Engineering, National Tsing Hua University

Education

Ph.D. Mechanical Engineering, Carnegie Mellon University, Pittsburgh, PA, USA.
M.S. Mechanical Engineering, Carnegie Mellon University, Pittsburgh, PA, USA.
B.S. Mechanical Engineering, National Central University, Chung-Li, Taiwan.

Professional Background

Distinguished Professor, Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan
Deputy Director, Intelligent Manufacturing and Circular Economy Research Center, National Tsing Hua University, Taiwan.
Professor, Department of Power Mechanical Engineering, National Tsing Hua University, Hsinchu, Taiwan

Specialized Field

Robotics (AI, Soft, Bionic, Medical, Collaborative, Assistive), Mechatronics, Mechanical Vibrations, Dynamic Systems and Control, Smart Machinery and Manufacturing, Magnetic Recording & Date Storage Systems

Honors and Awards

Distinguished Engineering Professor Award, Chinese Society of Mechanical Engineers (CSME)
Industrialization Contribution Award-Silver Medal Award (Team), Industrial Technology Research Institute, Taiwan
Outstanding Innovation Award, Mechanical and Mechatronics Systems Laboratories, Industrial Technology Research Institute, Taiwan

Memberships

Fellow, American Society of Mechanical Engineers (ASME), USA
Senior Member, IEEE
Member, Sigma-Xi, the Scientific Research Society, USA

i-CREATe 2020 Workshop

Topic	Author(s)
The development and Application of a Novel Hand Rehabilitation Robot	Yu-Cheng Pei
Topic: Applications of a Powered Lower Limb Exoskeleton on Individuals with Spinal Cord Injury	Cheng-Hua Wu, Ting-Yun Wang
Ideal training Ankle Foot Orthosis (IT-AFO): a novel dynamic AFO with motion feedback	Shih-Ching Chen, Yin-Kai Dean Huang
Japanese Seating System and the International Cooperation of Asian Seating Assistance Project (ASAP)	KAZUSHI MATSUMOTO
Prospects and opportunities for TeleRehabilitation in Asia during the pandemic------Application of Telerehabilitation in Individuals with Chronic Stroke	Chien-Hung Lai, ChihJui Chen
A multi-modality physical-energy therapy innovation. Its mechanism and clinical application on healing and rehabilitation	Yue (Tim) PAN
Introduction of a Professional Foot Assessment and Fast Customized Insole Manufacturing System	Tung-Wu Lu, Yang-Chieh Fu
Introduction to Rehabilitation Robot Standards	Albert T.W. Li
Wearable Upper Extremity Rehabilitation Robot – Safety requirements and its related testing methods	Charles Huang
Implementation and Safety Requirements of Collaborative Robot Applications	Camus Jui-Yiao Su

i-CREATe 2020 Oral presentation

Topic	Author(s)
Development Of A Higher-Brain Functions Assessment System Using A Gaze Measurement System	Go Nakamura, Yuichiro Honda, Takaaki Chin
The Effects Of The Wearable Walking Support Device	Go Nakamura, Yuichiro Honda, Takaaki Chin
An evaluation of the Five Times Sit-to-Stand Test in older adult for frailty detection	Huei-Ling Chiu, Chi-An Chen, NilanthaPremakumara, ChamaniShiranthika, Chan-Yun Yang
Driving Robotic Arm For Feeding Task Based On Kinect image recognition	Ying-Hao Chen, Chian-Song Chiu, Chung-Wei Huang
Measuring Activities of Daily Living in Stroke Patients with Motion Machine Learning Algorithm	Pin-Wei Chen, Nathan A. Baune, Igor Zwir, Alex W.K. Wong
Symmetrical design of an open-source hand exoskeleton for the patients with impaired hand functions	VahehNazari, Shuai Li, Yong-Ping Zheng, MonzurulAlam

Topic	Author(s)
Application of the Kinect system for the functional assessment in elderly with and without sarcopenia	Tung-Wu Lu, Yang-Chieh Fu
An AIoT-Based Ergometer For Physical Training In Frail Elderly	Chih-Chun Lin, Yu-Sheng Lin, Li-ChiehKuo, Chia-Ming Chang, Fang Wen Hu, Fong-Chin Su
Development of a Movement Measurement System for Testing the Effectiveness of Nursing-care Support Devices	Katsuya Fukui, Kiyohiro Omori, Go Nakamura, JiroSagara, Takaaki Chin
Investigating the use of Listserv communications within an Australian assistive technology community of practice	Michele Verdonck, Libby Callaway, JenniDabelstein, Natasha Layton, Emily Baxter, Tania Burton, Siobhan Kennelly, Laura Macleod
Assistive Technology Public Policy And Service Delivery: Strategies To Move Beyong Health	Natasha Layton, Libby Callaway, Lauren Henley
The Association of Lumbar Lordosis with Pelvic Incidence in Asymptomatic Adults	Fei-Li Fang, Kuang-Ting Yeh, Chih-Wei Chen, Shu-Hua Yang, Fu-Shan Jaw, Wen-Tien Wu

i-CREATe 2020 Poster

Topic	Author(s)
A pilot test of end-effector type robot assisted gait training for children with brain lesion	Seulgi Kim, So Ra Park, KuemJu Lee, Ji-Hye Jung, Inkyoung Cho, Hyun Kyung Kim, HyosunKweon
The correlation and influence factors of physical fitness and nutritional status in home-dwelling seniors	Cheau-Jane Peng, Mei-Yuan Liu
Applying AI technology to establish a position tracking system for a walker with rehabilitation function	Ji-Jer Huang, Xiang-You Zhan
Apply SSVEP Technology to Design the Brainwave Assisted Communication-Control System	Chung-Min Wu, Yao-Hua Cho, Hsien-Feng Shao, Jun-Kai Wu, Shih-Chung Chen, Yeou-Jiunn Chen
Design of the Game-Oriented Assistive Device for Limbs Rehabilitation	Shih-Chung Chen, Tien-En Lin, Chung-Min Wu, Yeou-Jiunn Chen
Exploring the acceptability and adherence to implementing wearable sensors in research studying manual wheelchair users	Pin-Wei Chen, Alex W.K. Wong, Kerri A. Morgan
A Smart Walker Based On Step Detection Control	Chih-Kai Wu, Cheng-En Xue, Pei-Chung Chen
Developing a Computer-Aided Instruction based Picture Exchange Communication System to Promote the Communication Skills of Subjects with Autism Spectrum Disorder	Yeou-Jiunn Chen, Wei-Jie Wang, Ming-Yuan Ye, Yun-Han Chang

Topic	Author(s)
Using Convolutional Neural Network and Long-Short Term Memory to Electrocardiogram-based Blood Pressure Measurement	Yeou-Jiunn Chen, Yu-Chung Hou, Hong-RenXu
Developing a Gait Analysis System with Smart Insoles to Improve Rehabilitation Effectiveness with Assistive Walker	Yeou-Jiunn Chen, Yi-Feng Zheng, Yu-Jun Huang
A Preliminary Study On The “Assistive Technology Design Checkist” For Individuals With Autism Spectrum Disorders	Mei-Hwei Ho, Yeou-Jiunn Chen, Shih-Chung Chen, Chung-Min Wu, Pei-Chung Chen
Design and Develop an Assessment and Training Assistive Technology Set for Children with Learning Difficulties – Motor Performance and Motor Control	Hsin-Yu Huang, Chia-Hui Chu, Hsin-Yi Kathy Cheng
Design and Develop an Assessment and Training Assistive Technology Set for Children with Learning Difficulties – Logical Reasoning and Cognition.	Chia-Hui Chu, Hsin-Yu Huang, Hsin-Yi Kathy Cheng

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Supported by

Domestic

Taiwan Rehabilitation Engineering and Assistive Technology Society (TREATS)
Taipei Medical University (TMU)
Ministry of Education, Taiwan
Ministry of Science and Technology, Taiwan
The Bureau of Foreign Trade, MOEA, Taiwan
Department of Information and Tourism, Taipei City Government
Taiwan Society of Neurorehabilitation (TSNR)
Taiwan Engineering Medicine Biology Association (TWEMBA)
Taiwanese Society of Biomechanics (TSB)

International Create Asia

The Global Alliance of Assistive Technology Organizations (GAATO)
Assistive Technology Australia (AT Aust)
Australian Rehabilitation Assistive Technology Association (ARATA)
Hong Kong Occupational Therapy Association (HKOTA)
Hyogo Institute of Assistive Technology (HIAT) / Hyogo Rehabilitation Center (HRC)
Korean Association of Assistive Technology Professionals (KAATP)
National Science and Technology Development Agency, Thailand (NST-DA)
NZ Federation of Disability Information Centres (NZ FDIC)
Rehabilitation Engineering Society of Japan (RESJA)
START Centre, Singapore (START) Techlusive
The Global Alliance of Assistive Technology Organizations (GAATO)

TREATS 社團法人台灣復健工程暨輔具科技協會 Taiwan Rehabilitation Engineering and Assistive Technology Society
臺北醫學大學 TAIPEI MEDICAL UNIVERSITY
i-CREATe ASIA Conference
TWEMBA 社團法人台灣生醫電子工程協會 Taiwan Engineering Medicine Biology Association
台灣生物力學學會 Taiwanese Society of Biomechanics
台灣復健醫學會 Taiwan Academy of Physical Medicine and Rehabilitation
中華民國生物醫學工程學會 Taiwanese Society of Biomedical Engineering
MOST 科技部 Ministry of Science and Technology
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