

# Oral Sessions

## Oral Session 1, November 29th, 2025 (11:00–12:00)

Title: Motion Analysis and Emerging Technologies

Chairs: Daisuke Ichimura, Parunchaya Jamkrajjan

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### O-1-1 Ching-Wei Ye

Handwriting kinematics change on character copying in elders with mild cognitive impairment

### O-1-2 Shun Kawahara

Real-time vibrotactile feedback for improving the reproducibility of the table tennis backswing

### O-1-3 Ginga Kennis

Active perception with a monocular camera for grasping objects with diverse optical properties

### O-1-4 Wang Li-Chia

Dose the mandibular condyle have consistent and symmetrical joint surface kinematics during reciprocating movement in healthy individuals?

### O-1-5 Chang-Che LeeE

Developed evaluation system and motion analysis for upper limb rehabilitation assistive devices

## Oral Session 2, November 29th, 2025 (15:00–16:00)

Title: Devices and Augmented Reality Applications

Chairs: Mako Fukano, Ying Wai Tan

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### O-2-1 Yurina Tanaka

Real robo-free shot learning: a transfer learning method for deep learning models in robot control

### O-2-2 Yusuke Yamaguchi

Opening and closing operation of multiple types of doors by model-based approach

### O-2-3 Taisuke Sato

Cutting wires in an automated home appliance disassembly system

### O-2-4 Yun-Hsuan Chou

Effects of AR text reading on gait during stair ascent

### O-2-5 Shao-Lin Tung

Effects of AR text on gaze allocation while ascending stairs with an OHMD: a Pilot Study

### **Oral Session 3, November 30th, 2025 (9:45–10:45)**

Title: Sports and Rehabilitation Biomechanics

Chairs: Tsuyoshi Iitake, Po-Jung Chen

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#### **O-3-1 Tsan-Yang Chen**

Effects of portable low-level laser on the kinematic data in runners with quadriceps fatigue

#### **O-3-2 Shunta Kobayashi**

Elevated mediolateral slip risk during walking in individuals with unilateral transfemoral amputation

#### **O-3-3 Brian Chen**

Impact of neuromuscular impairments on pelvic asymmetry during gait in cerebral palsy

#### **O-3-4 Ryo Matsunaga**

A machine learning approach to estimate lower limb joint angles during running using a single IMU

#### **O-3-5 Jiaqi Li**

Individualized exercise prescription with a data-driven approach in stroke survivors – a pilot study

### **Oral Session 4, November 30th, 2025 (11:15–12:15)**

Title: Vision and Intelligence in Motion Science

Chairs: Masataka Yamamoto, Yun-Ju Lee

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#### **O-4-1 Kanato Nagai**

Enhancing webcam-based concentration estimation via multi-feature gaze analysis

#### **O-4-2 Hsuan-Lun Lu**

Improving markerless joint angle estimation using dual RGB cameras and LSTM modeling

#### **O-4-3 Satoru Sasajima**

Examination of the effects of low gravity on evacuation behavior through simulator experiments

#### **O-4-4 Yoshiki Nagasawa**

Investigation of brain activity under exposure to an 85 kHz magnetic field of 1 A/m strength.

#### **O-4-5 Sao Mai Nguyen**

Movement analysis for activities of daily living using infrared cameras: a dataset and an evaluation of deep learning human pose estimation

# Poster Sessions

## Poster Session 1, November 29th, 2025 (16:00–17:00)

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### **P-1-1 Cheng-Chung Lin**

A statistical multibody linkage model with marker-to-bone correction for hip joint center prediction in dogs

### **P-1-2 Hayato Ishiguro**

Three-dimensional gait analysis of mouse walking on a transparent running wheel

### **P-1-3 Sarina Maekawa**

Dynamic regulation of cerebellar nuclei activity during forced locomotion in a motorized running wheel

### **P-1-4 Rajnish Kumar**

Musculoskeletal model calibration using reconstructed EMG via a physics-informed autoencoder

### **P-1-5 Shih-Wun Hong**

A fuzzy inference system integrating functional and biomechanical factors for identifying non-copers in patients with anterior cruciate ligament deficiency

### **P-1-6 Sao Mai Nguyen**

Low-back pain physical rehabilitation by movement analysis in clinical trial

### **P-1-7 Hsin-Hui Wang**

Multifaceted proprioceptive functions in bowed-string-trained school-age children: an exploratory investigation

### **P-1-8 Jui-Da LIN**

Multi-person fall detection using mmwave radar networks and IMU-based motion validation

### **P-1-9 Hsian An Lin**

Personalized 3d shape reconstruction of the knee using 3d alexnet under varied dual x-ray configurations

### **P-1-10 Nozomu Tanaka**

Uniarticular and biarticular muscles: which are more efficient?

### **P-1-11 Shu-Wei Chang**

Inverse design for tailored-mechanical-property scaffolds using deep learning generative model

### **P-1-12 Kao-Shang Shih**

Effects of high tibial osteotomy on knee cartilage and ligament loading during functional activities: a pre- and post-operative 3D fluoroscopy and personalized finite element study

**P-1-13 Min Hsu**

Multiplanar cervical sensorimotor integration assessment in individuals with neck pain and dizziness using a novel approach

**P-1-14 Shu Kato**

Collision-aware object handling in confined and cluttered spaces

**P-1-15 Shunya Miwa**

Optimization of manipulator trajectories and equipment layouts in robot cell production systems using quantum annealing

**P-1-16 Yuhao Kang**

Biomechanical relationship between abduction function and partial repair in massive rotator cuff tears

**P-1-17 Yuito Ueda**

Measurement device for evaluating operator skills in endoscopic submucosal dissection

**P-1-18 Wen-Feng Huang**

Longitudinal monitoring of handwriting performance indicative of the progression of mild cognitive impairment

**P-1-19 Riina Matsushita**

Recognizing wires in an automated home appliance disassembly system

**P-1-20 Jie Yi Tung**

A Nonlinear dynamics approach to balance monitoring: IMU-based lyapunov exponent analysis

**P-1-21 Hikaru Sasaki**

Forward simulation of the assistance effect of artificial muscles on hip flexion

**P-1-22 Weng-Pin Chen**

Effects of insole design with honeycomb structure on the plantar pressure during stance phase of gait

**P-1-23 Yan Yuke**

The application of artificial intelligence in geriatric rehabilitation: evidence-based findings, research gaps, and future directions

**P-1-24 Te Fu**

Differential effects of rigid and kinesio taping on knee neuromechanics during sudden stop: a force–EMG coupling study

**P-1-25 Yanan You**

A deep learning approach for iEMG prediction using raw sEMG Signals from hamstring eccentric contractions

**P-1-26 Minghua Xian**

Knee–ankle coordination alterations in football players with chronic ankle instability

## **Poster Session 2, November 30th, 2025 (14:00–15:00)**

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### **P-2-1 Yi-Chun Kuan**

Compromised balance control during dual-task walking in mild cognitive impairment

### **P-2-2 Kai Kobayashi**

Residual limb length affects ground reaction force asymmetry during walking in unilateral transfemoral amputees

### **P-2-3 Kozo Naito**

An analysis for assessment of optimal movement control in baseball pitching

### **P-2-4 Ying Wai Tang**

Human running during fatigue: perspective from simple spring mechanics

### **P-2-5 Toki Sugiura**

Construction of body-link models using IMUs

### **P-2-6 Jeng Heng Lin**

Effects of saddle position and resistance on knee joint during cycling: six-axis loading and moments

### **P-2-7 Shih-Wun Hong**

Fuzzy and adaptive neuro-fuzzy inference system models using toe clearance and knee extensor moment to predict knee instability

### **P-2-8 Chia-Han Hu**

Alterations in knee mechanics with lateral wedge insoles during level walking in patients with anterior cruciate ligament deficiency

### **P-2-9 Nayun Ahn**

Load centralisation alters knee and trunk kinematics during countermovement jumps

### **P-2-10 Naoki Takahashi**

Differences in bent knee motions between a yellow paddle and a red card in race walking

### **P-2-11 Ryo Iwasaki**

Kinematic changes in upper- and lower-limbs movements in 100-m sprint

### **P-2-12 Po Jung Chen**

Upper-limb vibration enhances muscle strength in pre-frail older women: a pilot study

### **P-2-13 Kensuke Oshima**

The gesture imitation test for early detection of cognitive decline in community-dwelling older adults

**P-2-14 Renta Tomonaga**

Pilot study on 3D pose estimation for therapist-assisted gait using a two-camera setup

**P-2-15 You-Syuan Yang**

Changes of lower-limb joint kinetics during preferred walking in older adults with sarcopenia

**P-2-16 Yoshiyuki Kobayashi**

Fall risk assessment based on seated stepping exercise

**P-2-17 Yao Chang Lo**

Upper limb immobilization alters joint biomechanics and symmetry in healthy adults during obstacle crossing

**P-2-18 Ryota Morishima**

Standing weight-bearing asymmetry does not predict gait kinetic asymmetry in individuals with unilateral transfemoral amputation

**P-2-19 Ken Iwasaki**

Method for estimating plantar pressure distribution with thermal imaging

**P-2-20 Koichi Kaneda**

Lower joint, thigh and trunk segment kinematics of normal-height stepping motion in water and on land

**P-2-21 Tsuyoshi Iitake**

Effectiveness of the lower limb segment interactions on the interaction torque in soccer instep kicking

**P-2-22 Hirofumi Ida**

Response time during one-handed ball catch in room-sized virtual reality

**P-2-23 Mei-Ying Kuo**

Comparison of upper limb motor control in the sitting position in patients with parkinson's disease before and after deep brain stimulation surgery

**P-2-24 Xu Li**

Research hotspots and trends of traditional asian exercise interventions: a bibliometric analysis

**P-2-25 Haiyang Zhang**

From static terminology databases to dynamic tactical engines: constructing an ai-assisted football system based on a multilingual knowledge graph

**P-2-26 Chizuru Mito**

The measurement of finger braille tapping motion using acceleration and angular velocity sensors

**P-2-27 Minghua Xian**

Translating gait biomechanics into bedside fall risk prediction for hospitalized older adults