

Conference Schedule (Draft)

Wednesday 27.09.2023

Registration and Check-in

Location: College of Education

Thursday 28.09.2023

Opening Ceremony

Location: Conference Room 118, College of Education, ZJU

Keynote Speaker 1: Martin Lames: Machine Learning in Performance Analysis – Kings' Roads and Blind Alleys

Chair: Hui Zhang

Location: Conference Room 118, College of Education

Take a Photo (with All Participants)

Coffee Break

Parallel Sessions 1

Chair: Yingcai Wu

Location: Conference Room 118, College of Education

Chair: Juliana Exel

Location: Meeting Room 107, College of Education

Sensors and Testing Equipment:

Handle Grip and Acceleration Signatures of Table Tennis Racket for Stroke and Player Recognition

Authors: Thibault Delumeau, Plot Christophe, Le Carpentier Eric and Mousseau Pierre

Models and Predictions:

Discovering Strategy using Evolutionary Computation.
Applying a Genetic Algorithm to a Team Pursuit Cycling Track Cycling Race

Authors: Donal Kelly and Colm O'Riordan

Sensors and Testing Equipment:

A Finite Element Model to Predict Shear Deformation in Running Shoe Midsoles During the Foot Strike

Authors: Ben Lane, Lise Sissler, Benoit Abel, Kevin Dellion and Nicholas Tam

Models and Predictions:

An analysis of macro-influencing factors of FIFA World Cup competition performance: based on the SPLISS theory perspective

Authors: Mu Fan, Fei Liu, Jixin Fan and Hui Zhang

Sensors and Testing Equipment:

Ground Contact Time in Curve Running – a Sensor-Based Measurement

Models and Predictions:

Within-match performance fluctuations - assessment and observed vs. expected extent in table tennis

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| | Authors: Patrick Blauberger and Martin Lames | Authors: Ruizhi Liu and Martin Lames |
| 11:45-12:00 | Sensors and Testing Equipment: Research on human-environment interactive acquisition technology based on intelligent multi-sensor fusion Authors: Jianxiang Wang, Zhanguo Nie and Yuxin Peng | Models and Predictions: Factors Affecting NBA Player Draft Selection: An Analysis Based on a Generalized Linear Mixed Model Authors: Xiangshen Kong, Mu Fan and Hui Zhang |
| 12:00-12:15 | Sensors and Testing Equipment: A Flexible Gesture Recognition System Based On Graphene Aerogel and IMU Authors: Liang Zhong and Yuxin Peng | Models and Predictions: Using Multiple Linear Regression Models to Predict WNBA Basketball Players' Playing Time Authors: Chuqi Chen, Run Cao and Yixiong Cui |
| 12:15-12:30 | Sensors and Testing Equipment: 'My pace running' Endurance running practice using wearable devices Authors: Koji Murase, Yasuhiro Kawakita, Yasutaka Kawamoto and Takuma Hamagami | Models and Predictions: Spatial distribution and influencing factors of Chinese sports parks based on MGWR model Authors: Maolin You and Tao Ren |
| 12:30-13:30 | Lunch Break | |
| 13:30-14:30 | Keynote Speaker 2: Hyongjun Choi & Mei Teng Woo: Innovative Approaches to the Use of Practical Sports Analysis Tools in Education and AI Research Chair: Daniel Link Location: Conference Room 118, College of Education | |
| 14:30-16:00 | Parallel Sessions 2 | |
| | Chair: Jun Liu | Chair: Hayri Ertan |
| | Location: Conference Room 118, College of Education | Location: Meeting Room 107, College of Education |
| 14:30-14:45 | Machine Learning: Using Machine Learning for identifying soccer in-possession match phases based on their tactical intention Authors: Yuesen Li and Daniel Link | Data Analysis in Football: Beyond xG: Statistical Analysis of Attacking Performance in World Cup 2022 Authors: Runqing Ma, Jonas Bischofberger, Juliana Exel and Arnold Baca |
| 14:45-15:00 | Machine Learning: Research progress on sports injury warning models based on machine learning technology | Data Analysis in Football: Real-time Prediction of Football Outcomes Based on Spatio-temporal Action Matrix |

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| | Mengli Wei, Yaping Zhong, Yiwen Zhou, Huixian Authors: Gui, Shaohua Yu, Tingting Yu, Yeming Guan and Guangying Wang | Authors: Jianyang Hu and Shaoliang Zhang |
| 15:00-15:15 | Machine Learning: Short-term event prediction within matches in soccer using machine learning Authors: Steffen Lang, Thomas Wimmer, Alexander Isenko and Daniel Link | Data Analysis in Football: Exploring English Premier League Clubs Performance and Home-Away Differences Based on Passing Network Analysis Authors: Chenyuyan Yang and Otto Kolbinger |
| 15:15-15:30 | Machine Learning: Machine Learning based Automatic Effective Round Segmentation Method for Table Tennis Authors: Bo Yu, Minzhen Hu, Hao Yu, Jun Liu, Zechen Jin, Yang Yu and Qi Wang | Data Analysis in Football: Football space and control in Chinese Football Super League Authors: Jinying Jiang, Shouxin Zong, Huanmin Ge and Yixiong Cui |
| 15:30-15:45 | Machine Learning: Sports Performance Prediction Based on Metaverse and Deep Learning with Attention Mechanism Authors: Xinqi Feng | Data Analysis in Football: Research on the running performance of players with different playing styles in the Chinese Super League Authors: Ruihong Cheng, Huanmin Ge and Yixiong Cui |
| 15:45-16:00 | Machine Learning: Using SHAP to analyse the influence of football-related knowledge, attitude, and practice on health among students based on RF-TPE Authors: Honglin Song, Yutao Li, Zhenhang Zhang, Jiaxu Ma and Tianbiao Liu | Data Analysis in Football: Analyzing Key Success Factors in Balanced Games of the 2022 FIFA World Cup through FIFA Indicators Authors: Xi-Ao Li and Bo Han |
| 16:00-16:30 | Coffee Break | |
| 16:30-18:00 | Parallel Sessions 3 | |
| | Chair: Martin Lames | Chair: Naoki Suzuki |
| | Location: Conference Room 118, College of Education | Location: Meeting Room 107, College of Education |
| 16:30-16:45 | Digital Technology and Virtual Reality: Integration of digital tools in training and sports education | Data Analysis in Racket Sports: Using SHAP to diagnose the elite male table tennis matches based on hybrid LSTM-BPNN algorithm with hybrid analysis theory |

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| | Authors: Arnold Baca, Amin Chetouani, Elias Wallnöfer, Philipp Kornfeind and Juliana Exel | Authors: Honglin Song, Yutao Li and Tianbiao Liu |
| 16:45-17:00 | Digital Technology and Virtual Reality: A Study on the Formation of Parents' Attitudes Toward ICT Utilized Physical Education for the Next Generation Authors: Tatsuya Nakano and Koji Ishii | Data Analysis in Racket Sports: Exploring the Structure of the Stroke Effectiveness Model for Elite Table Tennis Players Authors: Qing Yang, Mu-zi Li, Zheng Zhou and Hui Zhang |
| 17:00-17:15 | Digital Technology in PE and Virtual Reality: Low-Cost Virtual Reality: A Promising Tool for Positive Mood States and Enjoyable Exercise in Healthy Individuals Authors: Juliana Exel, Michael Weissensteiner and Arnold Baca | Data Analysis in Racket Sports: Competitive Balance of Chinese Table Tennis Super League—Based on Simpson's Evenness Index Authors: Zhi-hao Chen, Qing Yang* and Mu-zi L |
| 17:15-17:30 | Digital Technology in PE and Virtual Reality: Game-theoretic Analysis of Tactic Usage in Elite Female Table Tennis Players Authors: Xiangtong Chu and Hui Zhang | Data Analysis in Racket Sports: Clustering Winner Stroke Routes in Singles Matches of Professional Tennis Players Authors: Jing Liu, Shouxin Zong and Yixiong Cui |
| 17:30-17:45 | Digital Technology in PE and Virtual Reality: Net-kill Opportunity Created by Smash in Badminton Doubles Authors: Lejun Shen, Yunlei Zhao, Yongming Chen, Ting Li, Ning Tang, Lu Ding and Jinwen Deng | Data Analysis in Racket Sports: Pure strategy Nash equilibrium number and PRR index for serving in tennis matches Authors: Rouli Ye and Wenming Liu |
| 17:45-18:00 | Digital Technology in PE and Virtual Reality: Research on Chinese Government's Policies related to the Development of Digital sport Authors: Li Zhang, Ying Wang and Hao Qiu | Data Analysis in Racket Sports: The Effects of Distance from the Net at the Hitting Point and Hitting Height on the Outcome of High Level Badminton Men's Singles Authors: Ya Luo and Lejun Shen |
| 18:00-19:00 | Dinner and free activities | |
| 19:00-21:00 | Dartfish Workshop | |
| | Friday 29.09.2023 | |

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| 09:30-10:30 | Keynote Speaker 3: Naoki Suzuki: Unleashing the Power of Technology: Revolutionizing Sports Coaching and Teaching Chair: Martin Lames Location: Conference Room 118, College of Education | |
| 10:30-11:00 | Coffee Break | |
| | Parallel Sessions 4 | |
| 11:00-12:30 | Chair: Yaping Zhong Location: Conference Room 118, College of Education | Chair: Sam Robertson Location: Meeting Room 107, College of Education |
| 11:00-11:15 | Computer Vision: Using computer vision for performance analysis in racket sports: how good is a computer to observe player's activity? Authors: John Komar, Quah Jian Tan, Corliss Zhi Yi Choo and Jia Yi Chow | Performance Analysis in Sports: The gap between China's CBA league and high-level leagues: Evidence from performance indicators Authors: Muzi Li, Yang Lu and Qing Yang |
| 11:15-11:30 | Computer Vision: Video Summarization for Event-Centric Videos Authors: Qingwen Li, Jianni Chen, Qiqin Xie and Xiao Han | Performance Analysis in Sports: Analysis of Sabermetrics in KBO league from 2020 to 2022 Authors: Soongyu Kwon, Woojin Lee and Hyongjun Choi |
| 11:30-11:45 | Computer Vision: Research on computer vision-based trajectory extraction algorithm for tennis players Authors: Sheng Wang, Hyongjun Choi and Hanzhe Feng | Performance Analysis in Sports: Analysis of "Short, Flat and Slow" Serving Strategy and Tactical Effectiveness Authors: Shangbin Li, Peiyu Zhao, Di Feng and Tao Jiang |
| 11:45-12:00 | Computer Vision: Sports video classification method based on improved deep learning Authors: Wenming Liu and Youjian Zhang | Performance Analysis in Sports: Analysis of progressive pass quality during 2022 Qatar Football World Cup Authors: Rong Ma and Yixiong Cui |
| 12:00-12:15 | Computer Vision: Expert's gaze-based prediction model for assessing the quality of figure skating jumps Authors: Seiji Hirosawa, Takayoshi Yamashita and Yoshimitsu Aoki | Performance Analysis in Sports: Analysis of Shot Opportunities in Relation to Possession Variables in Elite Football Match Authors: Jiale Wu and Yixiong Cui |

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| 12:15-12:30 | Computer Vision: Performance Analysis in Taekwondo using OpenPose Authors: Takashi Fukushima, Klaus Haggenmueller and Martin Lames | Poster: Exercise Physiology Time-frequency domain characterization of %1RM in free deep squat training based on velocity information Authors: Jiaao Zou (s), Fei Wang, Dexing Qian, Kaiyu Zhang and Yinsheng Tian |
| 12:30-13:30 | Lunch Break | |
| 13:30-14:30 | Workshop: Introducing Dartfish: Video-Based Technology Solutions and Student Training Chiar: Moon Seok Chung Location: Conference Room 118 | Workshop(13:00-14:30): Women in IACSS: Empowering the Future Chiar: Juliana Exel Location: Meeting Room 107 |
| Parallel Sessions 5 | | |
| 14:30-16:00 | Chair: Arnold Baca Location: Conference Room 118, College of Education | Chair: Hyongjun Choi Location: Meeting Room 107, College of Education |
| 14:30-14:45 | Data Mining and Pattern Recognition Exploratory Spatial Pattern Recognition of Hits on Archery Target Authors: Hayri Ertan | Exercise Physiology: Kinematic synergy in lower limb joints during walking: Effects of gait speed on toe vertical position control Authors: Xuan Liu, Jitong Liang, Lei Li and Ye Liu |
| | Data Mining and Pattern Recognition Automatic formation recognition in handball using template matching Authors: Manuel Bassek, Daniel Memmert and Robert Rein | Exercise Physiology: Effects of Marathon Running on lower extremity Kinematics and Muscle Activities during running task Authors: Wenjin Wang, Shaobai Wang, Wolfgang Potthast |
| 15:00-15:15 | Data Mining and Pattern Recognition Hoop Transformer: Read the game like a NBA Coach Xing Wang, Zitian Tang, Jianchong Shao, Shaoliang Authors: Zhang4, Sam Robertson and Miguel-ángel Gómez-Ruano | Exercise Physiology: Verbal and Conscious Processing Reflected in EEG as a Measure of Attentional Focus During Finger Movements Authors: Danyang Li and Liwei Zhang |
| 15:15-15:30 | Data Mining and Pattern Recognition Tactic Mining based on Natural Language Query in Racket Sports | Exercise Physiology: Improving the energy economy of human running with powered and unpowered ankle exoskeleton assistance |

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| | Authors: Jiang Wu, Zheng Zhou, Jiachen Wang, Hui Zhang, Yingcai Wu | Authors: Wenjuan Jiang, Ye Liu and Ao Jiang |
| 15:30-15:45 | Data Mining and Pattern Recognition Chinese Named Entity Recognition in Football based on Albert-BiLSTM Model Authors: Qi An, Bingyu Pan and Yixiong Cui | Exercise Physiology: (In-)stability in the brain network as a means to quantify motor creativity Authors: Yi-Shin Lee, Alicia Goodwill and John Komar |
| 15:45-16:00 | Data Mining and Pattern Recognition An Expected Wins Approach using Fisher's Exact Test for Bogey Player Identification Authors: Rory Bunker, Calvin Yeung and Keisuke Fujii | Exercise Physiology: Spatiotemporal parameters and lower limb kinematics of gait in patients with femoroacetabular impingement syndrom Authors: Hang Pan, Hanjun Li, Yulin Zhou, Xinxin Li, Hui Liu |
| 16:00-16:30 | Coffee Break | |
| 16:30-18:00 | Parallel Sessions 6 | |
| | Chair: Mei Teng Woo | Chair: Daniel Link |
| | Location: Conference Room 118, College of Education | Location: Meeting Room 107, College of Education |
| 16:30-16:45 | Database and Big Data: Predictive inference versus statistical inference when analyzing large data sets Authors: Robert Rein | Physical Education and Health: Barriers and Facilitators to Application of Artificial Intelligence in Physical Education Class Authors: Di Feng |
| 16:45-17:00 | Database and Big Data: Data Audit ^{@NSPFS} Software for Chinese National Students Physical Fitness Standard Testing Data Authors: Feng Gao, Dong Dong and Juncheng Liu | Physical Education and Health: Exploring the Intelligent Teaching Model for Dance Sport based on the OPST Framework Authors: Chenguang Li and Hyongjun Choi |
| 17:00-17:15 | Database and Big Data: Research on the Construction of College Students' Sports Participation Behavior Analysis and Early Warning Management Platform Based on Big Data Authors: Xingyu Tan | Physical Education and Health: Physical Activities of Chinese College Students and the Effected Factors during COVID-19 Authors: Shijing Yuan and Maolin You |
| | Database and Big Data: | Physical Education and Health: |

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| 17:15-17:30 | Research on public service institutional system of national fitness social organization Authors: Hongwei Fan, Yuzhe Luo, Yu Dai and Yuxin Wang | Influencing Factors of College Students' physical Health under the Background of "Healthy China Action" - Based on Factor Authors: Shuang Zhao and Hyongjun Choi |
| 17:30-17:45 | Database and Big Data: Momentum and Gender in Elite Recurve Archery Authors: Yangqing Zhao and Hui Zhang | Physical Education and Health: A Review of the Application of Artificial Intelligence in National Traditional Sports Authors: Zheng Qi |
| 17:45-18:00 | Database and Big Data: Geographical Variation in Relationship between Economy Growth and Cardiorespiratory Fitness of Chinese Children and Adolescents over 30 Years:Evidence from Seven Successive National Surveys Authors: Xiaomei Gan and Kehong Yu | Physical Education and Health: The impact of participation in learning assessment using ICT in physical education on community residents Authors: Koji Ishii and Naoki Suzuki |
| 18:00 | Coference Dinner | |
| | Saturday 30.09.2023 | |
| 09:00-10:30 | Workshop: Xiao Xie: Processing and analyzing sports videos with interactive visualizations Chair: Yingcai Wu Location: Meng Minwei Building, State Key Lab of CAD & CG, ZJU | |
| 10:30-11:00 | Coffee Break | |
| 11:00-12:00 | Keynote Speaker 5: Sam Robertson: Five big questions for AI & technology in high-performance sport Chair: Arnold Baca Location: Conference Room 118, College of Education | |
| 12:00-13:00 | Closing Ceremony Location: Conference Room 118, College of Education Dartfish-IACSS Young Scientist Award Introducation of next Conference | |