

TOPIC 9 - Sports Technology

Date: 6 December 2024 (Day Three)

Speakers: Mr Josep Escoda

Dr Alberto Carrio

Mr Ahmad Faedzal Md Ramli

Dr Raymond So

Mr Jimmy Takki



Mr Josep Escoda

- Chief International Relations Officer & Innovation Developments (Centre d'Alt Rendiment - CAR Sant Cugat, Barcelona, Spain), Secretary General (Association of Sport Performance Centres)

Graduated in Physical Education and Sport Sciences at INEF University in Barcelona on 1982 following studies, developing the first tools for Biomechanical Analysis in that University. 2D Capture, process and graphical representation and calculations. Received grants from General Secretariat of Sport of Catalonia for the development of human performance analysis software.

As athlete competed in Gymnastics, Football and Motocross at National Level. Former athlete in Freestyle Skiing received awards at Catalan and National level and competed in the World Cup in 1986. Develop software for the freestyle Skiing events while competing.

Related to the Waterski Racing from 1976 with the Strength Training Preparation of the Waterski Racing and Tournament National Team. Develop software for Racing Calculation for the Worlds of 1985. Has been responsible of calculation as Assistance or Chief Calculator of all world events from 1999 to 2009. Since

2004 Josep Escoda has been member of the E&A Racing Council of the International Waterski & Wakeboard Federation.

Josep Escoda starts in 1987 with the creation of the Olympic Training Centre, CAR Sant Cugat, from then he has been strongly related and directing the Research, Sports Sciences and Technology Units of CAR Sant Cugat. Along this time several International research and development projects being handled during Olympics Games Barcelona, Atlanta, FINA Championships, ITTF, ESA-NASA, IWWF, EU Experimedia, EU FeSport and other International events.

Josep Escoda is a member of the CAR Board of Directors, taking care of the Secretariat of the Association of Sports Performance Centres (ASPC) and taking part of the Organization of all the FORUMS from its very beginning. SYDNEY 1999, SANT CUGAT 2001, LOUGHBOROUGH 2003, MONTREAL 2005, BEIJING 2007, COLORADO 2009, PARIS 2011, RIO DE JANEIRO 2013, PUERTO RICO 2015, DURBAN 2017, BARCELONA 2019 and PARIS 2023.

International relationships have provided the opportunity to collaborate with Olympic Solidarity programs of the International Olympic Committee giving sporting advise to under development countries since 2005 until today.

Connected to the Olympic Movement since his first participation as Coach in Freestyle Skiing in Calgary 88 has been attending all games since Barcelona 1992 Olympics Games. Atlanta 1996, Sydney 2000, Athens 2004, Beijing 2008, London 2012, Rio 2016. Not Tokyo 2020 due to Covid and PARIS 2024.

Tutoring International Sport Development Projects under the ICECP Coaches Course of the USOPC, Olympic Solidarity and Delaware University. Since its beginning in 2008 until today.

http://www.udel.edu/ICECP/facultystaff/faculty_escoda.html

Josep Escoda has been member of the IOC Academic Advisory Board from 2014 to 2023 under the Athlete 365 Project <https://www.olympic.org/athlete365/>

Presentation Abstract: “Innovation at CAR Sant Cugat”

The ASPC Forum on Elite Sport, scheduled to take place in Hong Kong from December 3rd to 6th, 2024, will highlight groundbreaking innovations at the CAR Sant Cugat, the High Performance Centre of Catalonia in Barcelona. As a true legacy of the 1992 Barcelona Olympic Games, CAR Sant Cugat continues to lead the way in cutting-edge sports science and technology.

The forum will showcase key projects that have been instrumental in supporting major international events, such as the Olympic Games and World Championships, since Barcelona '92. Among the recent advancements is a pioneering pilot project in trampoline gymnastics and nutrition, where artificial intelligence (AI) is being applied to enhance athlete performance and Virtual Jury simulation. This project leverages AI-powered video analysis to automatically detect key performance parameters, providing real-time feedback and personalized recommendations to athletes and coaches. The system also offers nutritional advice based on the specific needs of each athlete, further optimizing training and competition outcomes.

Attendees will explore how CAR Sant Cugat's innovative approaches are shaping the future of elite sports and maintaining its legacy as a hub of excellence in athletic development.



Dr Alberto Carrio Sampedro

- Head of Research and Senior Lecturer (Barcelona School of Management), Associate Professors (Law Department, Pompeu Fabra University Barcelona)

Dr Carrio holds a Doctorate in Law, an MA in Education, an MA in Sports Law and an MA in European Advanced Studies. Dr Carrio is Senior Lecturer and currently Director of Research Programs at

the Barcelona School of Management. Pompeu Fabra University, Barcelona. Dr Carrio is also a Lecturer in Philosophy of Law at the Law Faculty of Pompeu Fabra University.

Dr Carrio has published four books and several academic articles on legal theory, constitutional law and the rule of law. The main areas of Carrio's research in recent years have been the conceptualisation of sports rules; the meaning and scope of equality and fairness in sport; the law and ethics of sports governance; and the impact of new technologies in sport and on the rights and welfare of athletes.

Dr Carrio is currently the principal investigator of two research programmes on the ethics of artificial intelligence in sport, funded by the Fundación BBVA and the Olympic Studies Centre, respectively. He is also the Deputy Director of Fair Play. Journal of Philosophy, Ethics and Sport Law.

Presentation Abstract: “AI for Sport. Getting the Best by Playing Fair”

Artificial Intelligence (AI) has quickly found its way into sport and is changing the way athletes, coaches, referees, fans, and many other stakeholders experience sport. Consider Video Assistant Referee (VAR), coaching assistance, scouting and talent identification systems, to name a few, and the revolution they have brought to sport (Agency, 2021; Woodie, 2021; FIFA 2022 & 2023). In the field of sports performance, 3D Athlete Tracking Systems (3DAT) and AI-driven smart neurostimulation are already producing extraordinary results.

This is to be expected given the large amount of research and resources that have gone into AI engineering in sport (Dick et al, 2021; Kholkin et al, 2021; Martens et al, 2021; Olthof et al, 2021; Marr, 2022). In contrast, there has been almost no research on the ethics of AI in sport, even though AI applications can have serious negative impacts on many areas of sport. Biased or poorly designed

	<p>algorithms can lead to wrong decisions and put athletes' health, careers, and well-being at risk; data breaches can affect privacy; and some AI-powered devices can negatively impact athletes' ability to make autonomous decisions. Not to mention athletes' extremely sensitive data feeding AI-powered devices. However, despite the issues and risks posed by AI systems, no ethical or regulatory framework has yet been adopted by sport governing bodies (SGBs) to promote the safe and trustworthy use of AI in sport.</p> <p>My research over the last few years has focused on the negative impact that AI can have on the rights, health, and well-being of athletes. Based on this research, my presentation will focus on providing an ethical framework to promote the safe, fair, and sustainable use of AI in sport and some basic guidelines for the governance of AI in sport.</p>
	<p>Mr Ahmad Faedzal Md Ramli</p> <ul style="list-style-type: none"> • Chief Executive Officer (National Sports Institute, Malaysia) <p>Mr Faedzal is currently the CEO of the National Sports Institute of Malaysia (NSIM), a position he has held since early 2019. He has been instrumental in leading ISN's progressive strategies and initiatives, particularly in the application of sports science, medicine as well as technology in high-performance sports for major international games such as the Asian Games, Commonwealth Games, Olympics and Paralympics.</p> <p>His past experiences include strategic roles across several multifaceted areas of public service predominantly on policy formulation and program implementation in sports, community development and national integration. Notably, he was the key driver of NSI transformation encompassing cultural reform, good governance as well as commercialisation.</p> <p>Mr Faedzal holds a master's degree in Sports Management from Florida State University, USA and was the Deputy Director with</p>

Economic Planning Unit, Prime Minister's Department prior his appointment as NSIM CEO. His previous sport management experience also includes a 5-year stint as the Secretary General of the Malaysian Civil Servants Sports Council.

He is not just a great cultural fit for the NSI as the high-performance sports agency under the Ministry of Youth and Sports, but also to the national athletes and the sporting fraternity. An avid sportsman, he represented his state team football team national level competition and still competes in amateur football competitions. His love and passion for sports never end, and 2023 was a memorable year for him in which he made his debut in Powerman, Spartan Race and trail running.

A firm believer of a whole of nation approach in sports, Mr Faedzal will continue to bring more energy in his mission to innovate and modernize Malaysian sport ecosystem by leveraging on the advancement in sports science, sports medicine, and sports technology.

Presentation Abstract: “Empowering Malaysia Sports Technology & Innovation Ecosystem”

The integration of sport technology is revolutionizing the global landscape of high performance sport offering Malaysia unprecedented opportunities to elevate its competitive edge. This presentation explores the strategic adoption of emerging technologies to enhance athlete performance, refine coaching methodologies, and optimize organizational efficiency within Malaysia’s sport ecosystem. Drawing from case studies and successful global practices, the presentation highlights innovations such as wearable sensors, data analytics platforms, advanced biomechanics tools, the development of sport-specific equipment, and Artificial Intelligence (AI) applications. By examining Malaysia’s existing infrastructure, policies, national strategy and expertise, this discussion identifies key areas for development,


including enhanced government agency collaboration, increased investment in R&D, and fostering robust public-private partnerships. The integration of localized technologies and culturally adaptive solutions is vital to addressing unique challenges while leveraging Malaysia’s talent pipeline and expanding its sport industry. Moving forward, a multistakeholder approach that combines science, technology, and coaching innovation is essential. This presentation aims to spark dialogue and inspire actionable strategies to position Malaysia as a regional leader in sport technology innovation and driving sustainable success on the global stage.



Dr Raymond So

- Director (Elite Training Science & Technology Division at Hong Kong Sports Institute)

Dr Raymond So is currently the Director of Elite Training Science and Technology of the Hong Kong Sports Institute (HKSI), the elite training center in Hong Kong. He has been actively involved in sports training and sports science and medicine research for many years. His major responsibility at the HKSI is to drive innovation and scientific and technological support to coaches to systematically and positively impact athletes’ high-performance results. He has done extensive research on windsurfing, muscle activation patterns, physiological demand and training methods. In recent years, he has emphasised on performance enhancement of elite cyclists. His research areas include muscle fatigue patterns in different cycling techniques, energy utilization during cycling competition and recovery modalities. His research work is published in international academic and professional journals and numerous keynote and invitational presentations. Dr So has served the Sports Medicine and Sports Science Association of Hong Kong, China for over 20 years and was the President from 2001 to 2005; he is currently a member of the Advisory Board, and Chairman of the Strength & Conditioning Commission of the Association. Besides, he is the President-Elect of the Asian Federation of Sports Medicine, a member of the Athletes Performance Enhancement Sub-Committee

	<p>of the Hong Kong Sports Association for the Physically Disabled, a member of the Board of Directors of the Anti-Doping Organization of Hong Kong, China, a member of the Education Commission of the International Federation of Sports Medicine, and Vice-President (Membership) of the Asian College of Exercise and Sports Science. He is also a Journal of Exercise Science & Fitness Editorial Board member.</p> <p>Presentation abstract to be announced</p>
	<p>Mr Jimmy Takki</p> <ul style="list-style-type: none"> ASPC Research Project Lead (SprintAI) <p>Mr Jimmy Takki approaches his work with a humble curiosity, exploring some of the biggest questions in sports and seeking answers through data, technology, and AI. In addition to his role as team lead for the ASPC research project, in his work with SprintAI he collaborates with professional sports teams in the NFL, NBA, and NHL to support holistic sports development, enhance athlete performance, and push the boundaries of what is possible.</p> <p>Jimmy holds a Master of Science in Technology from Aalto University. He is a trained Naval Officer and a lifelong learner, combining his technical expertise, disciplined leadership, and passion for continuous growth to drive innovation in sports.</p> <p>Presentation abstract and Biography to be announced</p>