

LARM² SEMINAR

Room meeting C4 of the teaching Engineering Building

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Wednesday 10 June 2026 at 10.00- 11.00

Industry 5.0: From system integration challenges to human-centered design based sustainable solutions

Jorge Solis, Visiting professor, Department for Engineering and Physics, Karlstad University, Sweden

Today and tomorrow's industry requires modern technology where collaboration takes place between people, between people and machines and between machines. Machines can monitor themselves, analyze the results and autonomously optimize operating conditions and production. The result is higher efficiency and productivity. In this lecture, Prof. Solis will present an overview of the ongoing projects in research and education at Karlstad University within the applications areas to ageing, energy, environment and education. In particular, the challenges within Industry 5.0 will be exemplified with an ongoing research project that deals with human-centered Industry 5.0. In particular, I will present the integration of machine learning-based 3D gesture recognition system to make it easier for humans to send commands to a collaborative robot through body language as well as the integration of mixed reality for visualisation of both 3D cyber space and physical space to enable bidirectional human-robot interaction. Some other challenges related to adaptive control methods on battery energy storage in controlled environment plant production systems will be shortly introduced.

Jorge Solis has over twenty-five years of experience in both scientific and industrial oriented research projects in the EU as well as Japan. Fifteen years of experience as a Project/Scientific Leader in collaboration with different universities, and design engineers from highly regarded Japanese companies in the medical field such as Kyotokagaku Co. Ltd., Hitachi Aloka Medical Ltd., etc. Jorge's excellence has been also recognized in 2024 by the Royal Swedish Academy of Engineering Sciences (IVA). He has been the general co-chair of the 14th Mechatronics Forum International Conference and program co-chair for the 23rd CISM-IFTOMM Symposium on Theory and Practice of Robots and Manipulators and the 2026 IEEE/SICE International Symposium on System Integration. He is a senior member of the IEEE, member of the Robotics Commission for the IFTOMM, the International Federation for the Promotion of Machine and Mechanism Science.



All interested people are invited to attend.

Directors of LARM²: Prof. Marco Ceccarelli and Prof. Matteo Russo