

SUPSI

Artificial Intelligence Applications to Industrial Robotics

Modulo breve

Presentazione

Robotics is a key enabler for industries. In fact, manipulators are increasingly used to perform a wide variety of applications, assisting the human operators, relieving them from repetitive and onerous tasks. While past applications were addressed merely programming a specific robot behavior to perform a highly customized task, advanced intelligence is now needed in order to provide adaptability and flexibility to the robotic system, making it able to face new situations.

Indeed, Artificial Intelligence finds massive application to enhance the robot intelligence. Thus, this course aims to address such a field, highlighting interesting contributions in the development of intelligent manipulators in the industrial robotics context.

Obiettivi

This course will provide the participants with theoretical and practical basis to select, implement, and make use of AI techniques for industrial robots and processes.

Destinatari

Robot users, people optimising and tuning industrial processes, users of AI techniques.

Requisiti

Python bases

Certificato

Certificate of attendance

Programma

- Introduction to industrial robotics and collaborative robotics
- Review of robot kinematics, dynamics, and motion control
- Basics on interaction control
- AI methodologies applied to industrial robotics application (Bayesian optimization, preference-based optimization, reinforcement learning)
- Applications

Durata

20 hour-lessons

Responsabile/i

Dario Piga, researcher at Istituto Dalle Molle di studi sull'Intelligenza Artificiale, USI/SUPSI

Relatore/i

Loris Roveda received the M.Sc. and Ph.D. degrees in mechanical engineering from Politecnico di Milano, Milan, Italy, in 2011 and 2015, respectively. He is currently a Permanent Researcher with the Scuola Universitaria Professionale della Svizzera Italiana (SUPSI), Istituto Dalle Molle di studi sull'Intelligenza Artificiale (IDSIA), Università della Svizzera italiana (USI), Manno, Switzerland, working on AI and ML techniques applied to industrial robotics (such as robot control, human-robot collaboration, and dynamics identification). He has been involved in many national and European projects and he is the author of international journal and conference papers.

Date

February 28

March 2, 7, 9, 14, 16, 21, 23, 28, 30, 2023

Orari

17.30-19.00

Luogo

Online

Costo

CHF 700.00

Members AFTI, AITI, ATED, HSE-Ticino, HR Ticino e itSMF. Save 10%

Contatti

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Informazioni

SUPSI, DTI, Formazione continua

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Termine d'iscrizione

Within February 3, 2023

Link per le iscrizioni

<https://fc-catalogo.app.supsi.ch/Course/Details/37854>