Short course:
Machine learning based risk analysis in industry

Industry is stepping into its 4.0 phase by implementing and increasingly relaying on cyber-technological systems. Wider networks of sensors may allow for continuous monitoring of industrial process conditions. Enhanced computational power provides the capability of processing the collected "big data". Early warnings can then be picked and lead to suggestion for proactive safety strategies, or directly initiate the action of autonomous actuators ensuring the required level of system safety. But have we reached these safety 4.0 promises yet, or will we ever reach them?

A traditional view on safety defines it as the absence of accidents and incidents. A forward-looking perspective on safety affirms that it involves ensuring that "as many things as possible go right". However, in both the views there is an element of uncertainty associated to the prediction of future risks and, more subtle, to the capability of possessing all the necessary information for such prediction. This uncertainty does not simply disappear once we apply advanced artificial intelligence (AI) techniques, but it can be found behind modelling choices and parameters setting.

These seminars will illustrate a series of examples where AI techniques are used to continuously update the evaluation of the safety level in an industrial system. This will allow us to affirm that such advanced techniques are progressively providing a reliable support for critical decision making and guiding industry towards more risk-informed and safety-responsible planning.

The seminars are intended for non-specialists. Master and Ph.D. students interested in the topic are warmly invited to attend.

Schedule

14.10 h. 9:30 – 11:30: Introduction to Advanced Risk Analysis

21.10 h. 9:30 – 11:30: Dynamic Risk Analysis

28.10 h. 9:30 – 11:30: Safety data analytics and machine learning

04.11 h. 9:30 – 11:30: Machine learning and human factors

To attend

In person: room 1.2, Ravenna Campus, Building ex-asili, via Tombesi dall'Ova 55, Ravenna

Remotely:

https://teams.microsoft.com/dl/launcher/launcher.html?url=%2F_%23%2Fl%2Fmeetup-join%2F19%3Ameeting_MjY0Y2JlNTctOGU4Mi00NmM5LTg3NDEtZmEzZjQ3YjkwYjZh%40thread.v2%2F0%3Fcontext%3D%257b%2522Tid%2522%253a%2522e99647dc-1b08-454a-bf8c-699181b389ab%2522%252c%2522Oid%2522%253a%252234b87e37-05d9-485c-8356-d70aacbf5396%2522%257d%26anon%3Dtrue&type=meetup-join&deeplinkId=beabb757-7f4a-4a61-8825-0f79cf53fb88&directDl=true&msLaunch=true&enableMobilePage=true&suppressPrompt=true