Seminars cycle

Juan Sandubete

Elvesys - Elveflow, Paris

INTRODUCTION TO MACHINE LEARNING

Monday 29 May, Tuesday 30 May, Wednesday 31 May 2023

4:00pm

sala Wataghin, Physics Department, via Pietro Giuria 1, Torino

Abstract

The three seminars are composed as an introduction to basic principles of AI and Machine Learning. In the first seminar, some definitions and classifications of the algorithms are given together with examples (essential concepts like what is the difference between artificial intelligence, machine learning and deep learning) to get some first intuition about the topic. The second seminar serves to explain the main algorithms which allow us to automatically learn from data. Namely, backstepping and gradient descent. Some hands-on examples are also given to show how can artificial neurons be implemented using Python. Lastly, the last seminar is a hands-on workshop to show how to implement deep learning algorithms to some simple cases and to discuss how can these algorithms be applied to systems or experiments of interest. terrestrial facilities. We present findings and compare radiation damage with observations from using COTS (non-hardened) SRAM chips.

Speaker:

Juan Sandubete Lopez was born in San Fernando, Spain in 1996. He received his M.Eng. degree on Systems and Control Engineering in 2021 from University Complutense of Madrid. Previously, he obtained his B.Eng. degree in Electronics, Robotics and Mechatronics in 2018 from University of Seville (Spain). He created and patented cost-effective underwater modular probe for oceanography measurements based on commercial electronics combined with physic models and data fusion algorithms as a M.Eng. thesis. Additionally, Juan has been working at the software engineering industry since 2017, participating in two previous H2020 projects working on the estimation of internal states of hydrogen fuel cells. As a PhD student at Elvesys within the "LasIonDef" project, he works on developing appropriate software (and hardware) to realize a novel microfluidic flow sensor for low flow rate and wide range sensing applications.

ref: Paolo Olivero (paolo.olivero@unito.it)