



University of Pavia

Ph.D. School of Electrical and Electronics Engineering and Computer Science

Theoretical Introduction and Applications of Machine and Deep Learning

A two-day workshop in collaboration with AWS Italy and Neosperience

April 23rd and 30th 2021
Online seminar on Zoom

Abstract: In the last years we assisted to a rapid growth of artificial intelligence, machine learning (ML), and deep learning (DL). These technologies are now commonly employed in many different fields, such as image and video processing, car driving, natural language processing, robotics, data analysis, healthcare, and so on.

This two-day workshop, realized in collaboration with Amazon Web Service (AWS) Italy and Neosperience, aims to illustrate some of the current state-of-the-art ML and DL methods and the achievable results. The seminars include both theoretical lectures and interactive demos of AWS software made available for the participants.

Registration is mandatory. Registration closes on April 19th

Organizers

Prof. Luca Lombardi
Piercarlo Dondi, PhD

Ph.D. Coordinator

Prof. Paolo Di Barba

Seminar in English

Registration form: <https://forms.gle/87qCM5g66TFUCuZF6>

The Zoom link will be sent to all the registered participants a few days before the start.

For more information: luca.lombardi@unipv.it, piercarlo.dondi@unipv.it

Program overview:

Day 1 – April 23, from 9:00 to 16:30 CET

Title: Opening

Contents: Welcome and introduction

Duration: 30 minutes

Time Slot: 9:00 – 9:30

Speakers: Piercarlo Dondi, Research Fellow and Luca Lombardi, Associate Professor, University of Pavia

Title: Introduction to research and AI applications

Contents: Basic theoretical concepts and practical examples

Duration: 1 hour and 30 minutes

Time Slot: 9:30 – 11:00

Speakers: Luca Bianchi, Neosperience CTO, AWS Hero

Title: Data Engineering: Preparing data for Machine Learning

Contents: AWS Analytics overview and demo of AWS Glue DataBrew (visual data preparation)

Duration: 2 hours

Time Slot: 11:15 – 13:00

Speakers: Enrico Brambilla and Cristian Gavazzeni, AWS Solutions Architects

Lunch Break

Time Slot: 13:00 – 14:30

Title: Introduction to AI & ML on AWS

Contents: From ML frameworks and infrastructure to AI services: overview and hands-on demo

Duration: 2 hours

Time Slot: 14:30 – 16:30

Speakers: Veziona Ekonomi and Luca Guida, AWS Solutions Architects

Day 2 – April 30, from 9:00 to 16:30 CET

Title: Medical Imaging on AWS

Contents: AWS services used for Medical Imaging (ParallelCluster, FSx for Lustre, S3, GPUs) Relevance of Medical Imaging (e.g.: drug design, specifically for COVID-19)

Duration: 1 hour

Time Slot: 9:00 – 10:00

Speaker: Brian Skjerven, AWS HPC Specialist Solutions Architect

Title: Computational Fluid Dynamics and ML

Contents: Revolutionizing the design of the next generation of cars and planes

Duration: 1 hour

Time Slot: 10:00 – 11:00

Speaker: Neil Ashton, AWS CFD Specialist Solutions Architect

Title: Computer Vision on AWS

Contents: Overview and hands-on demo

Duration: 1 hour

Time Slot: 11:15 – 12:15

Speaker: Alex Casalboni, AWS Developer Advocate

Lunch Break

Time Slot: 12:30 – 14:00

Title: Amazon SageMaker Hands-On Workshop

Content: Amazon SageMaker demo

Duration: 2 hours

Time Slot: 14:00 – 16:00

Speakers: Veziona Ekonomi and Luca Guida, AWS Solutions Architects

Title: Closing

Contents: Discussion and conclusion

Duration: 30 minutes

Time Slot: 16:00 – 16:30

Speakers: Piercarlo Dondi, Luca Lombardi, Luca Bianchi, et al.