



## **CALLS AND EVENTS**



### **PHD CONSORTIUM, SHORT AND PICTORIAL PAPERS - IASDR 2023**

The deadline to make your Phd Consortium, Short paper, Pictorial, workshop, and panel contributions has been extended to May 7<sup>th</sup>.

May 7<sup>th</sup>, 2023



## **SEMINARS AND WORKSHOPS**



### **RESILIENCE WITHOUT OVERDESIGN: THE VALUE OF INSERTING 'SUPER-RESILIENT OBJECTS' IN CIRCULAR PRODUCTS**

Prof. Massimo Panarotto (Chalmers University of Technology)  
Prof. Panarotto's talk will highlight the difficulties when designing for resilience in circular products.

May 3<sup>rd</sup>, 2023 – 11:30



### **RESEARCH AND DEVELOPMENT ON ADVANCED JOINING PROCESSES AT FEUP/INEGI**

Prof. Lucas da Silva (University of Porto)  
This talk will focus on research and development on advanced joining processes at FEUP/INEGI

May 12<sup>th</sup>, 2023 – 02:30pm



### **COMPUTER VISION TECHNIQUES FOR AUTOMATED MONITORING OF LARGE-SCALE CIVIL, ENERGY, AND MECHANICAL ENGINEERING STRUCTURES**

Prof. Alessandro Sabato (University of Massachusetts Lowell)  
Prof. Sabato's talk will describe some applications of computer vision techniques for structural health monitoring of large-scale engineering systems.

May 30<sup>th</sup>, 2023 – 11:00 am





## STARTING COURSES – PHD SCHOOL

### INDUSTRIAL SKILLS

**Prof. Biscari Paolo, Prof. Fotios Filippopoulos**

Develop and exploit in the young PhD students a system of skills development and innovation management in industrial and service companies

From 1 May to 30 June 2023



### INNOVATIVE TEACHING SKILLS

**Prof. Brunetto Domenico Savio**

The course objective is to stimulate the participants' awareness of the complexity of the learning/teaching processes, while providing hints and tools for an innovative design and management of the learning experiences.

From 1 May to 30 June 2023



### LA COMUNICAZIONE NELLA SCIENZA

**Prof. Paganoni Anna Maria**

Obiettivo principale del corso è promuovere e diffondere la cultura scientifica in senso lato, enfatizzando il legame con altre discipline. In particolare ci avvaliamo della grande esperienza maturata presso il "Laboratorio di Formazione Matematica e di Sperimentazione Scientifica" (Dipartimento di Matematica - Politecnico) e della rafforzata collaborazione tra il Piccolo Teatro di Milano e il Politecnico.

From 1 May to 15 July 2023



### POWER OF IMAGES AND VISUAL COMMUNICATION FOR RESEARCH DISSEMINATION

**Prof. Iarossi Maria Pompeiana, Prof. Bollini Letizia**

The course aims to provide sparks for critical reflection and operational tools for an improvement of the effectiveness of visual language in academic context, both if the image is a support and an integration to a written text (as in a scientific article) and in case of oral presentations in scientific or public forums. (as a ppt for a conference).

From 29 May to 7 July 2023



### SCIENTIFIC COMMUNICATION IN ENGLISH

**Prof. Biscari Paolo, Prof. Sluckin Timothy Jan**

The aim of the course is to develop and improve the candidates' scientific writing, as well as increase their ability to deliver scientific and technical presentations in English.

From 8 to 19 May 2023





## STARTING COURSES – DOCTORAL PROGRAMMES

### PHD IN MECHANICAL ENGINEERING

**INTRODUCTION TO COMPUTER VISION AND SENSOR DATA PROCESSING USING DEEP LEARNING**  
**Prof. Hamid Reza Karimi, Prof. Cetin Ahmet Enis (University of Illinois - Chicago)**

The course will focus on optical and infrared (IR) sensing and related applications

From May 22nd, 2023



### PHD IN INFORMATION TECHNOLOGY

**APPROXIMATE COMPUTING METHODS**

**Prof. Cherubin Stefano**

The evolution of computing capabilities is slowing down due to technological and architectural bottlenecks hard to overcome. Approximations are seen as a promising engine to boost computing performance in the next generations. Computing smarter is better than computing more. This module aims at providing an overview of the most popular approximate computing techniques with emphasis on their application in real-world computing systems. Every engineer who will likely face computing optimization problems in their career is welcome to attend.

From 22 May to 7 June 2023



**BLOCKCHAIN AND DISTRIBUTED LEDGER TECHNOLOGIES: PRINCIPLES, APPLICATIONS, AND RESEARCH CHALLENGES**

**Prof. Bruschi Francesco**

The aim of the course is to introduce the technology, the functional innovations and the potential applications of blockchains and distributed ledger technologies, explaining their historical development with real world cases and highlighting the research opportunities and challenges.

From 1 to 31 May 2023



**PARALLEL COMPUTING ON TRADITIONAL CORE-BASED AND EMERGING GPU-BASED ARCHITECTURES THROUGH OPENMP AND OPENACC / CUDA**

**Prof. Breveglieri Luca Oddone**

The course is dedicated to the techniques for high performance computing. It is aimed at experienced programmers, who wish to be introduced to the problems and solutions of parallel programming, or wish to optimize their applications on a parallel system. The spectrum of systems considered ranges from the traditional core-based systems to the emerging GPU-based ones. Effective techniques for developing and optimizing programs for parallel scientific and technical computing are presented, along with interesting sample applications and development proposals, thus following a "hands-on" teaching style. The course is cross-disciplinary.

From 22 to 26 May 2023



**STOCHASTIC DYNAMIC PROGRAMMING**

**Prof. Goodson Justin**

The course focuses on sequential decision-making in the face of uncertainty. A variety of real-world challenges fall within this scope, including problems in the management of supply and distribution networks, health care delivery, energy, and financial portfolios. In such problems, the decision-maker is tasked with identifying alternatives that perform well not only now, but across some horizon. Because sequential decision problems cut across many domains, they are studied in various disciplines. The engineering community focuses on optimal control, the operations research community references Markov decision processes, and the computer science community studies reinforcement learning. In this course, we leverage advances in each of these communities to study stochastic dynamic programs (SDPs). We address modeling, policy creation, and the development of dual bounds for SDPs. The course will be of particular interest to students who want to connect deterministic optimization techniques with SDP solution strategies.

From 16 to 25 May 2023

