KIOS Distinguished Lecture Series

Prof. Dimitrios Tzovaras

Chairman,
Centre for Research and Technology Hellas (CERTH)

Tuesday, 7 February 2023, at 13:00 | Amphitheatre **B108**

Deep Learning as a key enabling technology for Industry 4.0

LECTURE ABSTRACT

Short description:
Deep Learning is certainly a disruptive technology that is changing industry in what is called the fourth industrial revolution, aka Industry 4.0. In this lecture, we will see how Deep Learning accomplishes this, discussing methodologies for monitoring of industrial processes, detection and prediction of defects as well as calibration and self-optimization of equipment.

Abstract:
AI has found many applications in industry, foremost as a tool to detect defects and identify anomalous states. However, the advent of Deep Learning has revealed news ways of innovation beyond quality inspection, thus enabling the transition to Industry 4.0. In this lecture we will see how Deep Learning can be used to monitor hidden production parameters, simulate and predict upcoming defects and eventually calibrate and dynamically configure industrial equipment. In doing so, we will discuss open research challenges on the availability of annotated data and the trustworthiness of AI compared to a human operator.

BRIEF BIO

Dr. Dimitrios Tzovaras is Chairman of the Board of Directors of the Centre for Research and Technology Hellas. He has conducted very important scientific and research work, which is summarized in 3 books, 55 book chapters, 250 publications in International Journals with Referees and 630 presentations in International Conferences with Referees.

His main research interests include network and visual analytics, computer vision, robotics, virtual and augmented reality, machine learning and artificial intelligence. He is also deeply engaged in applied research aiming at providing innovative solutions in the fields of Energy, Medicine, Industry 4.0, Transport and Culture. Since 1992, he has participated with his team in more than 300 Research and Development projects funded by the EU and the Greek General Secretariat for Research and Innovation and has concluded industrial contracts with leading companies, such as Samsung, Pfizer, etc. He has an extensive management record having been the project coordinator and/or the technical/ scientific manager of 56 projects, during the last 5 years.

Dr. Dimitrios Tzovaras is also actively involved in innovation and entrepreneurship initiatives. He is the co-founder of nine (9) spin-offs of CERTH/ITI and the initiator of one of the most innovative activities in the area of e-infrastructures in Greece, the Near Zero Energy Smart House (nZeb), an officially recognized Digital Innovation Hub of the EU. He is also the coordinator of a Mega Project on Artificial Intelligence and Simulation Applications of ThessInTec, the 4th generation Technological Park of Thessaloniki (the most important innovation project in Northern Greece).