UNEP SEMINAR: November 28\textsuperscript{th} in WEB 2230 @ 4:35 pm

NUCL 5999; NUCL 6999; NUCL 7999

“Intelligent Signal Analysis for Nuclear Detection and Identification”

Dr. Miltos Alamaniotis, Postdoctoral Researcher in Nuclear Engineering, The University of Utah

Abstract

Dr. Alamaniotis will present his Ph.D. research on nuclear detection and identification algorithms. Signal analysis for nuclear detection finds use in homeland security, nuclear safeguards, and spectroscopy. Its synergism with artificial intelligence tools provides the necessary framework for development of automated, quick and of high accuracy instrumentation. Dr. Alamaniotis will present his work on developing a set of intelligent signal analysis algorithms for use in detection and identification of isotopic patterns in gamma spectra. Particularly, Dr. Alamaniotis will discuss intelligent algorithms for extracting isotope signatures in measured spectra, as well as machine learning based approaches in estimating background spectrum. Furthermore, Dr. Alamaniotis will present algorithm application on various types of spectra.

Bio

Dr. Miltos Alamaniotis is a postdoctoral researcher in Nuclear Engineering Program at the University of Utah since October 2012. In 2000 he joined the Department of Computer Engineering in University of Thessaly, Volos, Greece and obtained his degree in 2005. During his B.S. studies he developed an interest in artificial intelligence and signal analysis. In 2005 he joined the Applied Intelligent Systems Laboratory in School of Nuclear Engineering at Purdue University, Indiana, USA.
There, he worked under the supervision of Dr. Lefteri H. Tsoukalas and developed intelligent methodologies for a variety of nuclear and power applications. He received his master degree in 2010 and Ph.D in 2012. His interests include Pattern Recognition, Machine Learning, and application of artificial intelligence techniques for signal analysis, nuclear material detection and security, monitoring and control of nuclear power plants, smart power grids and load forecasting.