UNIVERSIDAD COMPLUTENSE MADRID

Facultad de Informática

Modeling and Machine Learning for Estimation, Simulation, and Optimization

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Sala de Grados - Lunes 28 de Noviembre de 2016 - 12:30

Entrada libre hasta completar el aforo

Resumen:

Currently, we observe a certain hype around big data technologies. The exponential amounts of data generated and stored globally offer huge potentials for new products and services and have reignited interest in machine learning and artificial intelligence. However, many jump onto the machine learning bandwagon without a clear understanding of the underlying concepts and believe that given enough data, ML can be used to solve all kinds of problems automatically. In this talk I'll give an introduction to the fundamentals of data-based modeling, simulation and optimization with examples of real-world applications in engineering. I'll describe alternative approaches for systems optimization to highlight situations where data-based modeling and simulation are especially effective and I'll describe methods for data-based modeling briefly. Practical examples will be demonstrated using HeuristicLab – an open source software environment for heuristic optimization (http://dev.heuristiclab.com).

Sobre Gabriel Kromberger:

Dr. Gabriel Kronberger has studied informatics and technical sciences at the Johannes Kepler University in Linz and has worked as a research assistant in the Heuristic and Evolutionary Algorithms Laboratory (HEAL) at the University of Applied Sciences Upper Austria where he also completed his dissertation on Symbolic Regression for Knowledge Discovery. Currently, he is professor for data engineering and business intelligence at the School for Informatics, Communication and Media at the University of Applied Sciences Upper Austria. His main topic of research are algorithms for identification and optimization of empirical models, especially identification of symbolic regression models using genetic programming. He is in active collaboration with several international companies using symbolic regression techniques for modeling and optimization.