Teaching Statement

Mario González Rodríguez

mario.s.gonzlez@gmail.com

(*Dated:* 15 July 2019)

Teaching interests: I have taught courses on Data Analytics techniques and tools to understand how data can support decision making and contribute to the achievement of strategic objectives of organizations, extract information/patterns from the data and provide the appropriate information so that decision making is based on facts (data). Complimentary, I have taught introductory courses in machine learning and data mining.

I have taught courses on Research Operations, covering Linear Programming and network optimization problems. Modeling and Simulation for Engineering courses. The topics covered were the principles of M&S, Discrete Event Simulation, as well as advanced topics don M&S, such as Complex Networks, Petri Nets and Elementary Cellular Automata. Each topic was presented with a practical approach, implementing computer Monte Carlo simulation. The preferred languages for the computer implementation were Python, and R.

I have taught Introduction to Programming for different undergraduate degrees, using different languages: MATLAB/Octave/Python/C for BSc. in Business Management, Industrial Engineering, Software/Telecommunications Engineering. Teaching an introductory course on programming can be a challenging task. In order to convey a formal language and the logic behind programming, a hands-on experience from the very beginning of the course have proved to be effective. Programming is one of the most enriching intellectual activities and develops the Students' ability to formulate and solve problems, and to understand systems (simulation). To facilitate the comprehension of programming I keep my classes interactive, and practical labs are encouraged through the course, with intuitive examples related to each knowledge area.

Plan for future: I would like to teach courses in Business Management emphasizing the use of computational tools to deal with the topics under study. I am interested in teaching courses of Knowledge Extraction/Data Mining for supporting decision making in Business/Industrial Environments; Modeling and Simulation techniques, namely numerical simulation through general purpose languages such as Python; Introduction to Numerical Analysis for Business Management, covering the basic techniques for root finding, interpolation, approximation of functions, integration, differential equations, etc. Likewise teaching seminars of topics in complex networks structure, as an analysis tool to a variety of problems in engineering, i.e. Business organizational structure. Also, I would enjoy teaching miscellaneous seminars on Data Analysis/Mining Tools such as R/Python/Julia.