Alvaro Perez-Diaz

PERSONAL DETAILS

Nationality	Spanish
Address	Agents, Interaction and Complexity, Electronics and Computer Science, University of Southampton
Website	`http://www.alvarop.me`, `https://github.com/alvaropp`
Email	`cv@alvarop.me`

WORK EXPERIENCE

Research Data Scientist (Internship) Jan-Apr 2019

Senseye.io

Data science wok on unsupervised learning and anomaly detection. This involved research and software implementation of data science products.

External consulting 2018

S&P Platts, BlockLab.nl

Academic consulting and participation in an industrial innovation project looking at smart-grid technology. Responsibilities included advising on design decisions and actively working with developers.

EDUCATION

Ph.D. Program in Computer Science 2015-2019

University of Southampton (UK)

Supervisors: Dr Enrico Gerding and Professor Frank McGroarty

Currently starting my third and last year, my research focuses on the interaction between large fleets of electric vehicles and electricity markets and power infrastructure. So far, my research applies techniques from mathematical optimisation, mechanism design, game theory, decentralised multi-agent systems, blockchain and machine learning. My work is a combination of theoretical results and simulations using real data. We have published this research in top conferences and journals, as detailed in the publications section.

Research Interests: Multi-Agent Systems, Decentralised Multi-Agent Systems, Mathematical Optimisation, Game Theory, Mechanism Design, Forecasting, Machine Learning, Smart-Grid.

MSc Complex Adaptive Systems
2nd year Erasmus Mundus Master in Complex Systems Science 2014-2015

Chalmers University of Technology (Sweden)

First Class Honours.

Master Thesis: *The Minority Game: evolution of strategy scores* with Dr Mats Granath.

MSc Complexity Science
1st year Erasmus Mundus Master in Complex Systems Science 2013-2014

University of Warwick (UK)

First Class Honours.

Master Thesis: *Ultrasonic transducers: From analytical modelling to design optimisation and validation* with Dr Nishal Ramadas.

MPhys. Fundamental Physics 2009-2015

Universidad Nacional de Educación a Distancia (Spain)

Erasmus Exchange Program in Mathematics 2011-2012
University of Manchester (UK)
First Class Honours.

MMath. Mathematics 2008-2013
Universidad Complutense de Madrid (Spain)
First Class Honours.

PUBLICATIONS

Journal papers:

- Perez-Diaz, A., Gerding, E., McGroarty F. *Detecting Strategic Manipulation in Distributed Optimisation of Electric Vehicle Aggregators*. arXiv:1810.07063 (2018).
- Martinez-Cillero, R., Willcock, S., Perez-Diaz, A., Joslin, E., Vergeer, P., Peh, K. S-H. *A practical tool for assessing ecosystem services enhancement and degradation associated with invasive alien species*. Ecology and Evolution, 9(7) (2019).
- Perez-Diaz, A., Gerding, E., McGroarty F. *Coordination and payment mechanisms for electric vehicle aggregators*. Applied Energy, 212:185-195 (2018).
- Granath, M. and Perez-Diaz, A. *Diffusion and localization of relative strategy scores in the Minority Game*. Journal of Statistical Physics, 165(1):94–114 (2016).

Conference papers:

- Gerding, E., Perez-Diaz, A., Aziz, H., Gaspers, S., Marcu, A., Mattei, N., Walsh, T. *Fair Online Allocation of Perishable Goods and its Application to Electric Vehicle Charging*. In Proc. of the 28th International Joint Conference on Artificial Intelligence (in press, 2019).
- Perez-Diaz, A., Gerding, E., McGroarty F. *Coordination of Electric Vehicle Aggregators: A Coalitional Approach*. In Proc. of the 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2018).
- Perez-Diaz, A. *Coordination of Electric Vehicle Aggregator Participation in the Day-Ahead Market*. In Proc. of the 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2018). Doctoral Consortium.
- Perez-Diaz, A., Gerding, E., McGroarty F. *Decentralised Coordination of Electric Vehicle Aggregators*. In International Workshop on Optimization in Multiagent Systems (OptMAS-18).

Software:

- Perez-Diaz, A. and Fangohr, H. PythonTool-Mod for Minecraft: developing programming skills with Minecraft & Python (2016). DOI: 10.5281/zenodo.801627 `https://github.com/ngcm/PythonTool-Mod`

SKILLS

Languages	Spanish (mother tongue), English (fluent)
Programming	Python (proficient)
	C, Java, Matlab, R (prior experience)
Other	Electronics, product prototyping, web development, writing
Hobbies	Outdoors, running, cycling, adventuring, travel