Ramón Darío Iglesias

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Education

Stanford University **01/2016-Present**
Ph.D. in Civil Engineering (expected 2019)
Autonomous Systems Laboratory (ASL) - Advisor: Marco Pavone
Focus: Optimal Control of Autonomous Fleets.

Stanford University **09/2012-06/2014**
M.S. in Civil Engineering
Focus: Construction Data Analysis and Optimization.

The University of Texas at Austin **08/2007-06/2012**
B.S. in Civil Engineering

Recent Experience

Stanford University, Stanford, CA **1/2016-Present**
Researcher
Devising methods to model and control large fleets of autonomous vehicles (Autonomous Mobility-on-Demand, or AMoD).

- Developed a queueing-theoretical framework to characterize AMoD systems (published in Workshop on the Algorithmic Foundations of Robotics 2016).
- Leveraged network flow theory to model and optimize the interaction between fleets of autonomous electric vehicles and the power grid.
- Trained deep learning models to predict short-term travel demand and devised a model predictive controller that leverages the forecasted demand to operate in real-time large fleets of autonomous vehicles.
- Collaborated with Toyota to implement vehicle relocation algorithms in their carsharing system, Ha:mo, in Japan.

SunPower, Richmond, CA **01/2015-01/2016**
Financial Software Engineer
Architected and developed software for the Financial Products team.

- Built a new pricing engine written in Python and deployed in Amazon Web Services (reduced the cost of the residential pricing engine by 80% and the response time by 90%).
- Developed an internal data processing web application to run and visualize complex financial analyses.
- Architected and implemented the DevOps pipeline for the Financial Products team.

Stanford University, Stanford, CA **10/2013-12/2014**
Researcher
Developed methods to model contractor operational costs into wind farm layout design, and devised algorithms to optimize wind farm building schedules.

- Built predictive model to forecast the expected number of days lost due to high winds by month and the best hours of the day to work each month using Markov models trained on past hourly wind data.
- Optimized crane path schedules for wind farm erection.
- Optimized wind farm layout while considering erection costs and life-time revenue.
- Built a web application that contractors can use to leverage the aforementioned methods.

Skills and Interests

Software: Python (Numpy, Pandas, Tensorflow, Flask), Javascript (AngularJS, D3, Leaflet), R, MATLAB; AWS, Spark, Git, Docker, CircleCI, PostgreSQL, LaTeX

Coursework: Machine Learning, Data Mining, Decision Making under Uncertainty, Optimization, Deep Learning, Data Visualization, Optimal Control, Web Development

Sports: Show Jumping, Soccer, Racquetball

Languages: Spanish (native), English (fluent), German (intermediate)

Publications

[1] F. Rossi, R. Iglesias, M. Alizadeh, and M. Pavone. On the interaction between autonomous mobility-on-demand systems and the power network: models and coordination algorithms. In *Proc. IEEE Conf. on Robotics and Automation*, 2018. Submitted.

[2] R. Iglesias, F. Rossi, K. Wang, D. Hallac, J. Leskovec, and M. Pavone. Data-driven model predictive control of autonomous mobility-on-demand systems. In *Proc. IEEE Conf. on Robotics and Automation*, 2018. Submitted.

[3] R. Iglesias, F. Rossi, R. Zhang, and M. Pavone. A BCMP network approach to modeling and controlling autonomous mobility-on-demand systems. *Int. Journal of Robotics Research*, 2017. Submitted.

[4] R. Iglesias, F. Rossi, R. Zhang, and M. Pavone. A BCMP network approach to modeling and controlling Autonomous Mobility-on-Demand systems. In *Workshop on Algorithmic Foundations of Robotics*, 2016.