Dr Iker Perez

Research Data Scientist

Contact

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Education

PhD in Mathematics 2015
University of Nottingham, UK

MSc in Statistics 2011
University of Nottingham, UK

Graduate in Mathematics 2010
University of the Basque Country, Spain

Skills

Coding:
Scientific: R, Matlab
General: Python ♥, Java, C++

Libraries:
ML: Tensorflow ♥, Keras, Scikit
Stats: Stan, Statsmodels, Jags
Data: Pandas, PySpark, Numpy
UI: Plotly, Dash, Shiny

DB: MySQL, Clickhouse, MongoDB

Misc: Git, Docker, AWS

OS: Ubuntu/Debian, Windows, Mac

Languages

English, Spanish and Basque.

Profile

Principal Scientist at Featurespace. Passionate about computational stats and probability theory. Interested in explainable AI and model fairness. Learning from great software developers.

Professional Experience

Data Science: Experience in finance (credit scoring, transaction fraud), computer vision (attributions, saliency), sports (forecasting outcomes), navigation (indoor positioning) and healthcare (workload estimation).

Machine Learning: Advanced understanding of regression analysis, trees, bagging & boosting, graphical models and neural networks, incl. embeddings, recurrent architectures and attention mechanisms.

Research: Expertise in stochastic control and Bayesian computational statistics, applied to optimization problems and probabilistic inference.

Software Development: Serviced end-to-end solutions with primitive services in cloud infrastructures. Storage, etl, compute, networking and dashboarding. Experienced with testing, CI/CD and agile development.

Recent Employment

Featurespace, *Cambridge, United Kingdom*

Principal Research Scientist **Jan 2022 - Current**
Identify opportunities for innovation. Define, supervise and contribute to research efforts in fraud prevention. Design and oversee machine learning functionalities in our hub and platforms.

AstraZeneca, *Cambridge, United Kingdom*

Senior Data Scientist **Aug 2021 - Jan 2022**
Governance of scalable machine learning systems. Supervise software design patterns for the provision of an operations research optimisation engine.

Featurespace, *Cambridge, United Kingdom*

Research Scientist **Feb 2020 - Jul 2021**
Research and dissemination of methodology for card fraud prevention and anti money laundering. Prototype tools to be used within delivery pipelines.

Oakbrook Finance, *Nottingham, United Kingdom*

Senior Data Scientist **Jul 2019 - Jan 2020**
Credit risk and customer management modelling. Design statistical model assessment tools, develop feature engineering and selection libraries.

University of Nottingham, *Nottingham, United Kingdom*

Assistant Professor in Statistics & Data Science **Jan 2017 - Jul 2019**
Research, supervision and teaching role based at the School of Mathematical Sciences. Develop Bayesian computational inferential methods targeted at epidemic and queueing systems.

Research Fellow in Computer Science **Oct 2015 - Dec 2016**
Interdisciplinary role collaborating with medical practitioners. Design decision support systems to inform best practice in Out-of-Hours hospital care delivery.

Sportradar UK, *London, United Kingdom*

Quantitative Analyst **Sep 2014 - Sep 2015**
Development of predictive models for tennis, Australian rules football and basketball. Research techniques for applications. Support in implementation.

Publications and Patents

Statistics and Probability:

- **Perez, I.** and Casale, G. (2021) *Variational inference for Markovian queueing networks*, Advances in Applied Probability, 53 (3), 687–715.
- **Perez, I.**, Hodge, D. and Kypraios, T. (2018) *Auxiliary variables for Bayesian inference in multi-class queueing networks*. Statistics and Computing, 28 (6), 1187–1200.
- **Perez, I.**, Hodge, D. and Le, H. (2016) *Markov decision process algorithms for wealth allocation problems with defaultable bonds*, Advances in Applied Probability, 48 (2), 392–405.
- **Perez, I.** and Le, H. (2015) *Time-randomized stopping problems for a family of utility functions*, SIAM Journal on Control and Optimization, 53 (3), 1328-1345.

Computer Science:

- **Perez, I.**, Skalski, P., Barns-Graham, A., Wong, J. and Sutton D. (2021) *Path integrals for the attribution of model uncertainties*, in submission.
- Zhu, L., Casale, G. and **Perez, I.** (2020) *Fluid approximation of closed queueing networks with discriminatory processor sharing*, Performance Evaluation, 139, 102094.
- **Perez, I.**, Brown, M., Pinchin, J., Martindale, S., Sharples, S., Shaw, D. and Blakey, J. (2016) *Out of Hours workload management: Bayesian inference for decision support in secondary care*, Artificial Intelligence in Medicine, 73, 34–44.
- **Perez, I.**, Pinchin, J., Brown, M., Blum, J. and Sharples, S. (2016) *Unsupervised labelling of sequential data for location identification in indoor environments*, Expert Systems with Applications, 61, 386–393.

Engineering and interdisciplinary:

- Martindale, S., Golightly, D., Pinchin, J., Shaw, D., Blakey, J., **Perez, I.** and Sharples, S. (2018) *An interview analysis of coordination behaviours in Out-of-Hours secondary care*, Applied Ergonomics, 89.
- Pinchin, J., **Perez, I.**, and Sharples, S. (2017) *The geometry of place and activity*, Proceedings of the ION 2017 Pacific PNT Meeting, Honolulu, Hawaii, USA.
- Pinchin, J., Byrne, M., **Perez, I.**, Ward, A., Aldred, D., and Sharples, S. (2017) *Understanding visitors and their movements from WiFi*, Proceedings of the ION 2017 Pacific PNT Meeting, Honolulu, Hawaii, USA.
- **Perez, I.**, Brown, M., Pinchin, J., Martindale, S., Sharples, S., Shaw, D. and Blakey, J. (2016) *Informatics in Out of Hours Service Delivery: Methods and Applications to Inform Health Care Policy and Management*, Data for Policy 2016, Cambridge, UK.

Patents:

- Wong, K., Sutton, D., Barns-Graham, A. and **Perez, I.** (2021) *Training a machine learning system for transaction data processing*, WO/2022/008131.

PhD Thesis:

- **Perez, I.** (2014) *Results in stochastic control: Optimal prediction problems and Markov decision processes*, PhD Thesis, School of Mathematical Sciences, University of Nottingham.