

Stefano Meschiari, Ph.D.

Data Scientist

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Data scientist with an astrophysics background and experience in machine learning, numerical simulations, and product development.

RECENT WORK EXPERIENCE

Product Data Scientist

Feb. 2016 - Present, Civitas Learning

- Create, maintain, and improve prototype machine learning tools and pipelines integrated into the modeling platform.
- Maintain and improve the custom modeling platform. Reduced training and scoring running time (and cloud costs) by half.
- Prototype new product ideas and internal tooling that employ machine learning, novel summary statistics, and visualizations.
- Independently develop end-to-end components:
 - Machine learning models (linear models, random forest, gradient boosted trees, and custom classification techniques using R, Spark/Scala and JavaScript).
 - Back-end (Node.JS/Express, API calls to internal services, and offering new APIs and services for internal consumption).
 - Front-end (React, HighCharts and custom-built components and visualizations).

W. J. McDonald Postdoctoral Fellow; SAVE/Point, Principal Investigator

2012 - 2016, University of Texas at Austin

- Led the data analysis effort for the Lick-Carnegie science collaboration. Analyzed time series data using my Markov-Chain Monte Carlo code, *Systemic*. *Systemic* has been used to discover more than 40 new planetary systems.
- Wrote high-performance numerical algorithms to solve ordinary and partial differential equations; wrote large-scale Monte-Carlo simulations.
- Principal Investigator of SAVE/Point, a collaboration of astronomers and educators creating cutting-edge ed-tech games, apps, and iPad-powered kiosks, running on the latest Web technologies. My apps and games are used in MOOC classes in Coursera, and at Caltech, UF, MIT, UCSC, Yale, Columbia, and others.

Research Analyst and Contractor

2010-2011, VN7 Dynamic LP; 2013-2014, EFFEX Capital

- Led the development of a sophisticated desktop application to monitor the real-time performance of strategies on high-frequency stock trading.

TECHNICAL SKILLS

Machine Learning

Classification, regression, feature engineering, data cleaning, building machine learning pipelines.

Statistical Methods and Numerical Algorithms

Hypothesis testing, bootstrapping, Markov-Chain Monte Carlo, propensity score matching for causal inference, numerical optimization using local and global algorithms, numerical simulations, integration of ordinary and partial differential equations, time series analysis.

Programming Languages and Packages

- R (including dplyr, tidyr, ggplot2, RMarkdown, caret, glmnet, xgboost and other ML packages)
- JavaScript (both back-end and front-end, including Express, React, HighCharts)
- Scala (including Spark and SparkML)
- SQL
- Java, C and C++, Lua, Matlab. Basic knowledge of Python, Fortran, Objective-C.

EDUCATION

- 2012 **Doctor of Philosophy** (Astronomy & Astrophysics), University of California at Santa Cruz
- 2006 **Master of Science** (Astronomy, with highest honors), University of Bologna
- 2004 **Bachelor of Science** (Astronomy, with highest honors), University of Bologna

PUBLICATIONS, ACADEMIC HONORS AND AWARDS

- Published 8 first-author publications on time series analysis, numerical optimization, and Monte-Carlo simulations (cited a total of 224 times); a total of 17 refereed papers (<http://www.stefanom.io/research>).
- 2014 - Meschiari, S. (PI), Ludwig, R., Green, J., *Interactive Education Tools in the Public Square* (Award: \$2,800, for purchasing iPad Air tablets and wall mounts)
- 2014 - Meschiari, S. (PI), Green, J., Ludwig, R., *Bringing the Tools of Research Direct to the UT Classroom: Systemic, a Virtual Lab for Students* (Award: \$87,710)
- 2010 - *Award for Excellence in Teaching*
- 2008 - *Whitford Prize* for graduate academic performance
- 2006 - *Regents' Fellow*, University of California