Stefano Meschiari, Ph.D.

Product Data Scientist, Civitas Learning
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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 and improve on prototype machine learning tools and pipelines to model student outcomes.
- 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 (~20 scientists across the United States). 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, parallelized codes to solve ordinary and partial differential equations modeling planet formation.
- Principal Investigator of SAVE/Point, a collaboration of astronomers and educators creating cutting-edge edtech games, apps, and interactive touch kiosks, running on the latest Web technologies. Our apps and games are used in MOOC classes in Coursera, and at Caltech, UF, UT, MIT, UCSC, UD, 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, building ML pipelines.

Statistical Methods and Numerical Algorithms

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

Programming Languages

- R (including dplyr, tidyr, ggplot2, RMarkdown, caret, glmnet, xgboost)
- JavaScript (both backend and frontend, 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 high-impact journals (cited a total of 224 times); a total of 17 refereed papers.
- 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