

Alan M. Meert

CONTACT INFORMATION

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EDUCATION

Ph.D. candidate in Physics and Astronomy, University of Pennsylvania, 2011-Present
Advisor: Mariangela Bernardi
M.S. in Physics and Astronomy, University of Pennsylvania, 2009-2011
Advisors: Mariangela Bernardi & Masao Sako
B.S. Honors Physics, Purdue University, 2005-2009
Advisor: John Peterson

PROFESSIONAL EXPERIENCE

The Data Incubator, New York, New York
Data Science Fellow **June 2014-Present**

- Applied machine learning and statistical analysis techniques to predict next day price, volatility, and volume for oil futures
- Used a database of 150 million historical events to isolate relevant events

University of Pennsylvania, Philadelphia, Pennsylvania
Graduate Research Assistant **May 2009-Present**

- Tested supervised Bayesian models and template-based approaches to galaxy redshift estimation on 1,000,000 galaxies
- Analyzed 670,000 galaxies using 24-node computer cluster
- Developed quality metrics that reliably identify bad results with 80% accuracy
- Demonstrated that previous analysis was biased by up to 100% in size and mass using simulations

Purdue University, West Lafayette, Indiana
Undergraduate Research Assistant **January 2007-May 2009**

- Parallelized telescope data simulation for large scale data production using a distributed computing network
- Improved simulation speed 100-fold compared to previous single-processor simulation strategy
- Developed simulation pipeline including collection, cleaning, and assembly of necessary data

TECHNICAL SKILLS

- Analysis Techniques: linear and non-linear minimization, Monte-carlo simulations, image analysis, supervised learning techniques for classification and regression
- Languages: Python (including NumPy, SciPy, Matplotlib), MySQL, C, Basic Linux shell scripting
- Applications: L^AT_EX, Microsoft Office Suite
- Operating Systems: Unix/Linux, Windows, Mac

LEADERSHIP

- Astronomy Journal Club Organizer (2012-2014)
- Office Manager for Purdue Band Department Supply Office (2008-2009)

COMMUNICATION

- 2 first-author publications, 7 contributing-author publications; publication list available
- Developed and checked textbook practice problems for *College Physics* by Freedman, Ruskell, Kesten, Tauck (2011-2013)

OUTREACH

- Taught over 10 courses Physics Laboratory to both science and non-science students
- Public Telescope Outreach Volunteer (2009-2014) describing physical processes of the solar system to the general public