Ryan Applegate

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EXPERIENCE

Data Scientist - Staples, (2014 - present)

- Build product recommender systems with collaborative filtering and probabilistic approaches.
- Optimize personalized recommendations via click prediction algorithms.
- Utilize Apache Spark to process and monitor event data of critical application services.
- Automate data transformation and summarization using Spark, SQL, and pandas.
- Deliver analytics from user data to evaluate model A/B tests and communicate business impact.

Education Design Consultant - Knack Systems Inc, (2013)

- Prototype and design features for an online textbook hosted on AWS used to teach physics.
- Bring education domain expertise to engineers and designers of education applications.

Physics and Programming Instructor - UC Davis Extension Center, (2012 - 2013)

- Develop curricula, give lectures, oversee labs/demonstrations, evaluate student performance.

Graduate Student Researcher - UC Davis, (2007 - 2012)

- Collaborate and publish novel results with leading researchers in condensed matter physics.
- Create a robust codebase for repeated simulation of new theories in a fast paced research setting.
- Maintain domain knowledge in a rapidly changing scientific research environment.
- Implement time series Monte Carlo simulations and exact diagonalization models.

TECHNICAL SKILLS

Machine Learning - regression - classification - neural networks - matrix factorization
Quantitative Analysis - hypothesis testing - Bayesian inference - graphical models
Languages - Python (scikit-learn, numpy, scipy, pandas, matplotlib, Edward) - SQL - Matlab - C/C++
Tools - Apache Spark - AWS - git - TensorFlow - Docker

COMMUNICATION SKILLS

Presentation of scientific findings and data insights across audiences with varying technical backgrounds at conferences, workshops, and meetings to colleagues and stakeholders.
Publication of original research to academic journals in solid state physics and molecular dynamics.
Discussion with students, colleagues, and professors on topics spanning introductory physics, machine learning, statistics, programming, solid state materials and more.

EDUCATION

2012 - Ph.D., Physics, University of California, Davis
Dissertation: *Quantum Magnetism in the Iron-Pnictides and Rare Earth Pyrochlores.*
With extensive collaboration between theory and experiment, my computational studies helped show that a “Quantum Spin Ice” model can explain many aspects of an entire class of materials that exhibit a before unrealized phase of matter.

2005 - B.S., Physics, University of California, Davis
Honors Thesis: Physics of the Bank Shot in the Game of Basketball.