Drew Fustin

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Education

PhD	Physics (2012) – The University of Chicago [Experimental Dark Matter Physics – Juan Collar, advisor]
MS	Physics (2005) – The University of Chicago
BS	Physics, Mathematics, Astronomy (2004) – Drake University

Skills

Python (pandas, matplotlib, scientific stack, etc.), Tableau, MATLAB, Excel/VBA, R, d3.js, Google Maps, Mapbox/turf.js
MongoDB, SQL (MySQL, SQL Server, PostgreSQL), AWS/EMR
Statistics (linear/logistic regressions, machine learning, time series analysis, Bayesian statistics, etc.)
Writing production code, product ownership, experience at tech companies going through a merger, IPO, and acquisition

Experience

Digital H2O

Data Scientist (2014-present)

- Developed the individual well hydrocarbon production allocation algorithm, quantifying assets within the product
  - Built a unique offering within the oilfield intelligence software space by utilizing data from a variety of sources to determine the most likely contributions each well makes to its member lease's production
  - Wrote unit tests within Python backend to provide QA during ETL and ensure complete data coverage
- Created an industry-unique method to determine water production from individual well assets
  - Collected water-to-hydrocarbon ratios from governmental filings and projected the trajectory of this ratio over time, giving an extremely accurate estimation of monthly water production
- Eliminated lag in production data from delayed governmental filings by forecasting monthly hydrocarbon and water production values to present day and into the future (post-ETL, pre-production automated Python task)
  - Utilized both Bayesian Markov Chain Monte Carlo (Python emcee) and ARIMA methods (R forecasting package through Python RPy) to project the trajectory of production values across a given time series
  - Created an Information Criterion used to select a winning forecasting model on an individual well basis
- Designed data-driven presentations (Tableau/PowerPoint) for the CEO to deliver at national conferences, resulting in multiple sales leads converting into site licenses, making up nearly half of recent company revenue

GrubHub Inc.

Insights Analyst/Data Scientist (2013-2014)

- Built efficiency maximization models for an experimental delivery product launch which went into full-scale production, doubling this project's restaurant coverage in Chicago and allowing for expansion into Los Angeles
  - Optimized restaurant delivery boundaries using isochrone contours (self-created Python module) utilizing the Google Maps API to maximize delivery driver efficiency/cost by time of day
  - Predicted future restaurant order volume (Python statsmodels - ARIMA) for delivery driver staffing needs
  - Built the economic model for this initiative to prove project profitability and sustainability
- Co-created the News Bureau program – a PR initiative to generate gH data-intensive stories, providing insights to media/trade publications and establishing gH as the thought-leader in the industry
  - Increased the data-driven story rate six-fold in 2013 compared to 2012, contributing to a near tripling of total media mentions of the gH brands, thus improving gH's SEO value
- Generated the core content for an industry white paper, surveying the effects of delivery fees and minimums on revenue generation for both gH and our restaurant customers
- Developed methods to indirectly identify and cluster previously unknown diner demographics (college students, office workers, hotel travelers, and more) using clustering algorithms and text analysis in Python/Excel

The University of Chicago

Graduate Research Assistant/Data Analyst (2008-2012) [also 2004-2007]

- Collaborated on an experiment that set best-in-world dark matter limits
- Characterized background rates and detector efficiencies by comparing (gigabyte-scale) experimental data with multi-interaction neutron scattering Monte Carlo simulations (Los Alamos MCNP package and MATLAB)
- Wrote real-time diagnostic software using PID loops in LabVIEW to monitor and control temperature and pressure settings of vital experimental components to ensure safe remote detector operation

Susquehanna International Group

Assistant Options Trader (2007-2008)

- Built BI tools for senior trading staff, interfacing Excel through VBA to Bloomberg and in-house tools
- Worked closely with traders and market-makers in an apprenticeship role