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Work Experience

Data Scientist

October 2017 - PRESENT

GARTNER

Stamford, CT

- Improved client engagement with search by 5% by integrating a real-time recommender system (using PyTorch) based on a client's recent reading history into the search engine
- Created an XGBoost Learning to Rank (LTR) model to improve document ranking and reduce query abandonment in Gartner.com's client search
- Wrote robust data processing and model training pipelines (SQL and Pandas) to support the recommender system and the LTR model
- Developed a standard qualitative and quantitative evaluation pipeline for the LTR models, allowing for more rapid iteration and improvement
- Ran and analyzed A/B tests to ensure that changes to the model improved search KPIs (abandonment, engagement)
- Aided Solr infrastructure upgrades in Java to support current machine learning models

Data Science Fellow

June 2017 - September 2017

INSIGHT DATA SCIENCE

New York, NY

- Developed a probabilistic Python and PyMC3 model to predict MTA subway ridership changes resulting from station openings and closings, where ridership shifts among stations and lines, which can be used to inform the impact of future closures
- Built an online Flask dashboard backed by Postgres to display model results

Research Assistant

January 2012 - May 2017

NUCLEAR SCIENCE LABORATORY, UNIVERSITY OF NOTRE DAME

Notre Dame, IN

- Led research group to measuring the first scientific results from a next-generation particle detector system
- Wrote Python analysis framework PyNE for research group to improve experimental analysis and allow for streamlined reproducible results
- Evaluated the capabilities of a proposed \$13M detection system to be built at Michigan State University during its funding proposal stages to the NSF by contributing the forward check to the C++ and Python analysis package

Lecturer, Python for Physicists

June 2015, 2016

UNIVERSITY OF NOTRE DAME

Notre Dame, IN

- Designed and led lectures for 15-student sessions during the summer as part of the undergraduate research exposure program
- Designed new courses on data analysis, Monte Carlo methods, and other practical applications of Python for experimental uses
- Introduced standard python scientific stack packages (numpy, scipy, matplotlib) to students and focused on using best practices for analysis

Education

University of Notre Dame

Notre Dame, IN

PH.D. NUCLEAR ASTROPHYSICS

November 2018

University of Notre Dame

Notre Dame, IN

M.S PHYSICS

August 2014

Michigan State University, Lyman Briggs College

East Lansing, MI

B.S. ASTROPHYSICS, B.S. PHYSICS, MINOR: MATHEMATICS

May 2011