Shibi Rajagopalan, *Ph.D. Physics, Machine Learning, Data Science*

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Machine-learning data scientist, former physicist, with strong skills in Python, Linux, and SQL. Highly proficient in probability, statistics (time series), and applied mathematics. Very organized, capable of simultaneously managing and prioritizing multiple large projects. Excellent verbal & written communication of technical information: research presentations, publications, mentorship, public outreach, and teaching (all levels).

Data Science Experience

Data Science & Scientific Research Consultant Projects — Self-Employed (Current)

Consumer Products Analytics

- Weekly price optimization (price-elasticity modeling) for mega grocery-store chains
- Analyzed massive database: *trillions of records*; Tools: Python, AWS, Spark, Git
- Modeled using multivariate regression and dimensional reduction

Climate Research

- Working closely with client to write popular book on global warming – using knowledge of statistics and science to conduct extensive review of climate-science literature
- Employing time-series analysis, statistical modeling, multivariate regression, and spatial-correlation analysis
- Python analysis code for various climate databases (*Climate Project* repo link on side)
- High-quality, succinct reporting on research progress and project goals

Quantitative History

- Natural language processing in quantitative historical research for client searching for statistical patterns in war data for a book
- POS tagging, Chunking, and NER to gather significant historical events and dates to supplement existing public databases; web scraping

Theoretical Physicist — Acad. Institutions in US, France, & Italy

- Incorporated numerous data analysis techniques for scientific research: Time Series (*ARIMA, Regression, Filtration, Imputation, Fourier Analysis*) · Statistical Modeling · Bayesian Inference · Stochastic Processes · Optimization ·Simulations · MCMC
- Original research and publications in theoretical particle-physics phenomenology
- Tremendous experience in conveying complex ideas in plain language; teaching record at all levels from elementary to college level, always attaining stellar reviews; mentorship at graduate and postdoctoral level

Python Database Developer — Report Linker · Lyon, France

- Database and search-engine interface design
- Data-set research: added value via data-set collection, management, and curation
- Major data-set debulking – over 80% reduction – led to better search relevance
- Data Munging: ETL, scraping, cleaning, parsing, indexing of XML, JSON, REST, unstructured data, and other formats
- Developed Solr search interface, enhanced search results from structured output
- Continuously worked within cross-functional teams: content, marketing, sales, and IT

Past Works

DS/Scientific Research Consultant, Bulgaria/US 2015 - 2017
Int'l Research Fellow Theor. Physics, INFN, Torino, Italy 2011 - 2013
Physics & Math Grad. Assistant, Florida State & OU 2003 - 2010
Science Instructor, Luzerne College, Nanticoke, PA Fall 2002
Python Database Developer, Report Linker, France 2014
Visiting Researcher, LPSC, Grenoble, France 2011 - 2013
Polymer Lab Intern, BerkTek, New Holland, PA 2003
Undergrad. Lab Asst., Sand Physics, Penn State 2000-2001

Education

2010 Ph.D. Theoretical Physics
University of Oklahoma

2008 M.S. Physics
Florida State University

2005 M.S. Applied & Comput. Math
Florida State University

2002 B.S. Physics · Penn State Univ.

Proficiencies

Machine Learning · Statistical Modeling · Time Series · Optimization · Mathematics · Data Structures · Algorithms

Practical Skills

Python (Scikit-Learn, Pandas, NumPy, SciPy) · Linux Shell · SQL · AWS · Spark · Git · TensorFlow

Links

Climate Project: https://github.com/shibi-raj/analyzing_climate_databases

LinkedIn: www.linkedin.com/in/ShibiRajagopalan

Upwork Freelancing: https://www.upwork.com/o/profiles/users/_~01c4635d06b408f632/

Publications: https://www.researchgate.net/profile/Shibi_Rajagopalan

Languages

English · French · Bulgarian