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, 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, and teaching.

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 Employment

DS & Scientific Research Consultant, Self-Employed, Bulgaria/US, 2015 - 2017
Python Database Developer, Report Linker, Lyon, France, 2014
International Research Fellow Theor. Physics, INFN, Torino, Italy, 2011 - 2013
Visiting Researcher, Theoretical Physics, LPSC, Grenoble, France, 2011
Graduate Assistant, Physics & Math Departments, FSU & OU, 2003 - 2010

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

Practical Skills

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

Links

Webpage: https://shibi-raj.github.io/portfolio

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

Continued Learning

· NLP with Deep Learning · Stanford
· Neural Networks and Deep Learning · Neilsen
· Coursera · Machine Learning · Andrew Ng