

Sandeep Rajput

EMAIL: sandeep_rajput@hotmail.com

PHONE: (425) 449 9554 [Cell]

WEB: sandeeprajput.com

Technologist, scientist, visionary, people leader. 27+ years applying machine learning and statistical techniques in a variety of domains and product/service modality. My passion is building data science teams and organizations at large scales globally.

Professional Experience

ASSOCIATE VP & CHIEF DATA SCIENTIST		2014–CURRENT
PRACTICE BUILDING	Establish data science brand and grow business through impactful client, industry & academia conversations & partnerships; attract, mentor & grow talent; org structure & governance; own competitive strategy; stay abreast of latest ML/AI trends & paradigm shifts; lead key engagements.	
FRAUD PREDICTION	Lead development of ML solutions to predict likelihood of fraud in <i>e-tail</i> , <i>money transfer</i> and <i>product warranty</i> ; optimize strategy for value in existing client ecosystem	
PRINCIPAL DATA SCIENTIST, MICROSOFT		2010–2013
DATA SCIENCE	Built models and algorithms to flag harvested or pirated Win7 license keys worldwide. Modeled and identified signatures of piracy for several licensing channels.	
SEARCH ADVERTISING	Led keystone projects to unlock advertiser demand on adCenter (aka Bing Ads) by 50-60% by specific bid, keyword and campaign guidance at scale through scientific analysis of massive data.	
SENIOR RESEARCH SCIENTIST LEAD, FAIR ISAAC CORPORATION (FICO)		2003–2010
PREDICTIVE MODELING	Built suites of ML models (regression, neural nets, additive models) to predict delinquency, bankruptcy, revenue and churn; payment card and e-commerce fraud for clients in North America, Europe and Middle East; devised overall optimal decisioning strategies for these outcomes (risks).	
MACHINE LEARNING	Developed feature libraries of consumer preferences from time-series and textual information, predictive models with these features helped generate new revenue line of 10MM+ annually.	
DATA MINING	Designed the 2009 FICO/UCSD Data Mining (ML) Contest (304 teams from 35 countries). Applied R&D projects included evaluating alternate algorithms for feature selection & modeling, optimizing customer lifetime value with multiple scores and uncertainty, deep model monitoring.	
PRODUCT DEVELOPMENT	Led focus groups during development of FICO ModelBuilder™ Product. Provided list of essential data science functionality; part of the team in charge of prioritizing features in releases.	
RETAIL BUSINESS	Consulted to optimize store location and targeting; analyzed campaign performance; built direct marketing response/conversion models; helped optimize product offerings.	
PEOPLE MANAGEMENT	Supervised teams of very talented data scientists; trained & mentored colleagues on ML algorithms, business and technical knowledge; recruited and developed staff.	
GRAD. RESEARCH ASST., THE UNIVERSITY OF TENNESSEE, KNOXVILLE		1998–2003
RESEARCH	Developed a Matlab© toolbox to track small particles in fluidized beds from videos to characterize velocity fields; compared experimental output with CFD simulations to refine both.	
DATA SCIENCE	Created algorithms for fault diagnosis & anomaly detection for industry clients; Built GUI package for time-series modeling; trained professional senior engineers on nonlinear time series analysis.	
ASSISTANT MANAGER, RELIANCE INDUSTRIES LIMITED		1996–1998
MODELING & SIMULATION	Technical consulting for executive engineers; created models to fit observed measurements, simulated control strategies to reduce downtime and accidental shutdown.	

Education

M.S./Ph.D.*	Statistics	The University of Tennessee, Knoxville	2002–2003
Ph.D.	Chemical Engineering	The University of Tennessee, Knoxville	1998–2003
B.Tech.	Chemical Engineering	Indian Institute of Technology, Kanpur, India	1992–1996

* Completed M.S. in Statistics and passed written comprehensive doctoral exams in Statistics (2003)

Technical Skills

PROGRAMMING	Python, C, C++ , SQL, Java, Perl, Matlab
DATA SCIENCE	R, Python, Anaconda, Numpy, SciPy, Pandas, NLTK, sklearn, statsmodels; Matlab; SAS; \LaTeX , Beamer; MS Office suite (Word, Excel, PowerPoint, Visio)
CLOUD	AWS; Hadoop Ecosystem; Mallet, OpenNLP, SQL Server, PostgreSQL
STATISTICS	Linear & Generalized Regression, Time Series Forecasting, Bayesian Models, Mixture Models, Hidden Markov Models
MACHINE LEARNING	Neural Networks, Deep Learning, Decision Trees, Random Forests, Gradient Boosted Trees; SVM

Applied Research

2013	Web users as Automaton with limited Sentience: a Physics-based model of user interaction
2012	Heavy Tails in Online Experiments: Power Laws and Preferential Attachment
2011	Measuring Scale in Generalized Second Price Auctions
2009	Neural Networks and Special Values: More Predictive models by incorporating SME knowledge
2008	Next Best Action: Reinforcement Learning applied to Retail Credit
2007	Recursive Profiling and its impact on Machine Learning Performance
2005	Event-Triggered Marketing: Reaching Customers Multidimensionally at the Right Time
2004	Dynamic marketing strategy to detect customer Lifestyle Changes
2003	Customer Loyalty to Supermarkets: Predictive Modeling powered by Information theory

Academic Research

2015	Rajput, S., Paliwal M. and Mahajan, A. (2015). <i>Mixture Model for Graphite Flake Orientation Distribution in a Used Rotor</i> , Paper IMECE2015-50791, 2015 ASME Intl. Mech. Engr. Cong. Expo. , Nov 17-20, 2015, Houston, TX. Paliwal, M. and Rajput, S. (2015). <i>Numerical and Stochastic Analysis of Corrosion in Modular Hip Implants</i> . J. Mech. Med. Biology , 16(2), 1-25.
2014	Rajput, S. and Paliwal M. and Mahajan, A. (2014). <i>Stochastic Modeling of Crevice Corrosion with emphasis on Titanium alloys modular total joint arthroplasty</i> , Paper IMECE2014-37300, 2014 ASME Intl. Mech. Engr. Cong. Expo. , November 14-20, 2014, Montreal, Canada
2004	Sarnobat, S. U., Rajput, S., Bruns, D. D., DePaoli, D. W., Daw, C. S. and Nguyen, K. (2004). <i>Impact of external electrostatic fields on gas-liquid bubbling dynamics</i> , Chem. Eng. Sci. , 59(1), 247-258.
2003	Rajput, S. and Bruns, D. D. (2003). <i>Nonlinear time series analysis of flooding in a distillation column</i> , Paper 465d, In Proc. AIChE Annual Meeting 2003 . ISBN 0-8169-0941-5. Rajput, S. and Bruns, D. D. (2003). <i>Numerical simulations of the fluidized bed experiments using MFIX multiphase CFD code</i> . Report for Oak Ridge National Laboratory, ORNL - 400002312. Rajput, S. and Bruns, D. D. (2003). <i>Detection of Velocity Fields from videos of particles in fluidized beds</i> . Report for Oak Ridge National Laboratory, ORNL - 400002312.
2002	Rajput, S. and Bozdogan, H. (2002). <i>Choosing the number of PCs in localized PCA using kernel smoothing and information-theoretic criteria</i> . Report for Statistics Dept., UT Knoxville.
2000	Rajput, S., Shul-Cloper, R., Abidi, M. A. and Gonzalez, R. C. (2000). <i>A new method for searching an image in a scene</i> . Report for IRIS Lab, Elec. & Comp. Eng. Dept., UT Knoxville.