Anna Nazarova, Ph.D.

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Summary

Research data scientist with an academic degree in Applied Mathematics (special focus on Probability and Statistics). Extensive expertise over nine years with proven track record in various types of modelling: econometric and statistical predictive experimental models, partial integro-differential equations, stochastic simulations and analytic solutions, and machine learning algorithms.

Professional Experience

Since 01.2018 **Data scientist, Universal Seismic/Completion Imaging Analytics**, *Singapore*
Implementing various data science techniques to solve various geophysical problems and building tools for enhanced characterization of unconventional oil and gas reservoirs. Developing advanced algorithms for baseline process as well as creating analytical tools to draw recommendations from observations to help clients in strategic cost reduction.
Technologies used: Python pandas, numpy, scikit-learn, pytorch, tensorflow; **AWS Cloud** large scale computations.

03.2017 12.2017 **Freelance data scientist**
Contracting projects include: creating recommendations system and handling customer data analysis for a webshop and cafe, analysing GPS tracking data to identify human trajectories, optimising transportation costs for a online retailer.
Technologies used: Python pandas, numpy, scikit-learn.

01.2016 09.2016 **Quantitative researcher, WorldQuant LLC (Affiliate of Millennium Management)**, *Bangkok, Thailand*
Performing quantitative research for a global equity statistical arbitrage fund with a portfolio size of US$18 billion long and short, analysing and constructing automated trading signals from large data sets, including news, fundamental, options etc. Exploiting a variety of research techniques to develop alphas (more than 100, with backtested Sharpe >2), ranging from simple statistical analysis for time series and cross-sectional data.
Technologies used: C/C++ and **Python** for implementing algorithms to find alphas.

03.2014 12.2015 **Postdoctoral researcher, Chair of Applied Statistics and Stochastics, Duisburg-Essen University**, *Germany*
Investigating statistical inference of the Lévy density for a well-balanced Ornstein-Uhlenbeck process. **Supervisor:** Prof. Denis Belomestny.
Technologies used: Matlab for numerical sumulaitions of statistical errors.

06.2009 12.2009 **Research assistant, Centre of Mathematics for Applications, Oslo University**, *Norway*
Conducting empirical analysis of electricity spot price modelling and developing pricing derivatives techniques in incomplete markets. **Supervisor:** Prof. Fred Espen Benth.
Technologies used: Matlab and **R** for numerical implementation of predictive models.

04.2008 07.2008 **Intern, Bayerische Hypo- und Vereinsbank**, *Munich, Germany*
Developing, analysing and backtesting investment trading (momentum and contrarian) strategies to help internal asset managesr on investment process.
Technologies used: VBA for building and testing investment strategies.

Education

01.2010 02.2014 **PhD in Applied Mathematics.** Thesis title: *Stochastic Models for Energy Markets: Statistics, Pricing and Model Risk.*
Supervisors: Prof. Rüdiger Kiesel (Duisburg-Essen University) and Prof. Fred Espen Benth (Oslo University).
Graduated with Great Honor (Magna Cum Laude), awarded to top 10% of graduating cohort. Duisburg-Essen University, *Germany*

10.2006 02.2009 **MSc in Financial Mathematics**, Ulm University, *Germany*
Thesis title: *Lévy-based electricity spot price modelling.*

09.2001 07.2006 **Diploma in Mathematical Methods in Economics.**
Graduated with Distinction, awarded to top 5% of graduating cohort. Saint-Petersburg State University, *Russia*

Selected Publications

F. E. Benth, R. Kiesel and A. Nazarova: **A critical empirical study of three electricity spot price models**. Energy Economics journal, Vol. 34 (2012) No 5, p. 1589 – 1616.

K. Bannör, R. Kiesel, A. Nazarova and M. Scherer: **Parametric model risk and power plant valuation**. Energy Economics journal, Vol. 59 (2016), p. 423 – 434.