Aditya **Ravuri**

Statistician · Data Scientist

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Education

University of Cambridge — *Cambridge, UK*

MPhil in Management — *Oct. 2016 - Jun. 2017*

- Commendation (70%, top 25%). | **Audits:** Measure Theory, Philosophy of Science | **Focus:** Strategic Valuation (top prize), Economics.

Heriot-Watt University — *Edinburgh, UK*

BSc Hons in Actuarial Science, **Statistics Major** — *Sep. 2013 - Jun. 2016*

- **Awards:** Distinction (83%) (top 3%), CT1-CT8, Volunteering - Bronze (ChessSoc President, Union Exec, Mentor). Graduated at age 18.
- **Focus:** Statistics, Quantitative Risk Management, Mathematical Finance. **Project Areas:** GARCH models, copulas, extreme value theory, stochastic calculus, liquidity risk, economic scenario generators and advanced statistical inference. Published in the actuarial magazine.

Skills

Programming	R, Python, C/C++ (basic), SQL (basic), Stan, PyTorch, Tensorflow
Languages	English, Japanese (basic), French (basic), Hindi, Telugu
Others	Other probabilistic programming languages, ggplot, data.table, git, LaTeX, astrophotography

Contributions

Web	falmity.com: Personal projects (e.g. speech synthesis using Gaussian processes, Bayesian stats) and minimal examples (e.g. MGCV GAMs as GPs, Griffin-Lim, sparse GPs, state-space models). Cross Validated: (Stats Stack Exchange) top 2% contributor in 2018.
Code	SciPy - added a function to calculate Toeplitz matrix-vector products in log-linear time using the FFT. Wrote the core code base for the paper below.
Papers	Lalchand, V., **Ravuri, A.** and Lawrence, N. D. (2020). *Variational Gaussian Process Latent Variable Models with Normalising Flows*. Accepted at AABI 2021 under the title "GPLVFs for Massively Missing Data".

Experience

Barclays — *London, UK*

Quant Analyst + Developer, AVP — *Dec. 2018 - Present*

- Designing and productionizing large-scale statistical models for forecasting the evolution of portfolio balances, accounting for individual behavior. I'm responsible for modeling of certain portfolios - term deposits, loans, wealth, savings and mortgage applications, mainly using markovian models, regularized and hierarchical GLMs, GAMs and time series models.
- In three cases (involving data cleaning, data structure manipulation and Monte Carlo simulation), reduced execution time of critical model components from days to seconds using Spark and C++.

Sciemus — *London, UK*

Data Scientist + Statistician — *Sep. 2017 - Dec. 2018*

- Was involved with building and maintaining end-to-end stats/tech related solutions, particularly in the space, weather and power business areas. This involved data cleaning, analysis, modeling, documentation, web-app development and deployment (using Shiny, Dash, Flask), basic server and database maintenance (using postgres), research and development of infrastructure (e.g. aiding development of a distributed computing cluster on AWS).
- On the modeling side, I've worked with GLMs for assessing risk probabilities, Hidden Markov models & sparse Gaussian Processes to model rates based on large-scale weather data, simple random fields in the form of CNNs to model rainfall data, importance sampling & subset simulation to accelerate simulations, fuzzy logical risk models, basic prior elicitation & associated Jacobian adjustments.

Coloplast — *Peterborough, UK*

Data Science Intern — *Jul. 2017 - Aug. 2017*

- Aided implementation of a time series forecasting model (involving splines, linear filters & ARIMA error processes) and automated model fitting.

Jaguar Land Rover — *Cambridge, UK*

Quant Management Consultant — *May. 2017 - Jun. 2017*

- Modeled the contribution of JLR to the UK economy in a highly collaborative setting. Conducted **original research** on improving the accuracy of input-output multipliers. Highly commended for the work and presentation.