Aditya **Ravuri**

Statistician · Data Scientist

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Education

University of Cambridge — *Cambridge, UK*

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

- Commendation (70%). **Focus:** Strategic Valuation (top prize), Economics. **Audits:** Measure Theory, Philosophy of Science, Physics.
- Jaguar Land Rover consulting project: 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.
- Coloplast Internship (Aug. '17): Aided implementation of a time series forecasting model (involving splines, linear filters and ARIMA error processes) and automated model fitting.

Heriot-Watt University — *Edinburgh, UK*

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

- **Awards:** Distinction (83%) (top 3%), CT1-8, Volunteering - Bronze (ChessSoc President, Student Union Exec, Mentor). Obtained BSc 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.

A-Levels (CIE) — *Zambia*

A2: A*A*A*A* in Maths, Physics, Biology and Chemistry. **AS:** AB in Applied ICT and English. — *Sep. 2011 - Jun. 2013*

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

Side Projects

Web	falmity.com: Personal projects (e.g. speech synthesis using Gaussian processes) and minimal examples (e.g. MGCV GAMs as GPs, the Griffin-Lim algorithm, 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*. A smaller part of the work titled "GPLVFs for Massively Missing Data" was accepted at AABI 2021.

Employment

Barclays — *London, UK*

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

- Designing and productionizing large-scale statistical models for balance sheet forecasting of term deposits and loans, accounting for customer behavior and economic trends. Modeling mainly involves Markovian models, GAMs and time series models.
- In addition to this, I assist with and review other model implementations (e.g. for current accounts, savings and mortgages). I also pilot new tools, create knowledge-bases, work on automation and do exploratory work to identify areas of efficiency (e.g. with Spark, Rcpp, Docker). In some cases, I've reduced execution times from days to seconds.

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, importance sampling & subset simulation to accelerate simulations and other ideas in Bayesian statistics.