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Hyun Jik Kim

Education

2015 onwards **University of Oxford**, PhD in Machine Learning.
- Areas of Research: Scalable Bayesian inference, Automatic Machine Learning
- Current Research: Scalable structure discovery for automatic exploratory data analysis with Gaussian Processes(GP), Tensor GP regression with applications to Matrix Factorization with side information.
- Supervised by Yee Whye Teh, Professor of Statistical Machine Learning of the Statistics Department.

2011 – 2015 **Trinity College, University of Cambridge**, MMath, BA (Hons.) in Mathematics.
- **Part IA:** First Class Honours **Part IB:** First Class Honours **Part II:** First Class Honours **Part III(MMath):** Distinction
- Courses taken include: Probability and Measure, Advanced Probability, Applied Probability, Statistical Modelling, Time Series and Monte Carlo Inference, Modern Statistical Methods, Mathematics of Operational Research.

2007–2011 **Hampton School, Middlesex**.
- **Balkan Mathematical Olympiad:** Bronze Medal (Member of the UK Team)
- **British Mathematical Olympiad:** UK top 10. **British Physics Olympiad:** Gold Medal, UK top 20
- **A levels:** A* in Maths, Further Maths, Physics and French. **AS levels:** A in Economics and Biology
- **GCSEs:** 10 A*s including Maths and English

Honours and Awards

2015 ***Clarendon Fund Scholarship***, Awarded to the top 3% of graduate students across all disciplines at the University of Oxford, full funding for PhD studies.

2014 ***Heilbronn Prize***, for outstanding academic performance, Trinity College, Cambridge.

2013 ***Senior Scholarship***, for outstanding academic performance, Trinity College, Cambridge.

2012 ***Junior Scholarship***, for outstanding academic performance, Trinity College, Cambridge.

Computing

Languages Proficient in **C++, MATLAB, Julia, R**, with experience in creating R packages and using Rcpp.

Basic knowledge of **Python**

Applications Visual Studio Express; Git; LaTeX

Research

Nov 2014 – May 2015 **Master's Thesis : Bayesian Approaches to Collaborative Filtering on the Netflix Data**, University of Cambridge.*Supervisor: Dr. Rajen Shah*, Available at `https://github.com/hyunjik11/PartIIIessay`.
- Survey of state of the art Bayesian methods for the Netflix Problem, including Probabilistic Matrix Factorization(PMF), PMF with MCMC and Variational Bayesian algorithm.
- Empirical comparison of performance using numerical experiments on Matlab with possible explanations.
- Exploration of novel approaches including the use of Gaussian processes, and a hybrid of existing methods for improved performance.

Jun – Oct 2014 **Summer Research Project**, Statistical Laboratory, University of Cambridge. *Supervisor: Dr. Rajen Shah.*
- R implementation of *Random Intersection Trees*, a fast algorithm for finding prevalent interactions in large-scale sparse binary data, proposed in Shah and Meinshausen(2014) made into a package: **'FSInteract' available for download on Comprehensive R Archive Network (CRAN)**
- Features: Speed - Calls fast C++ code from R via the Rcpp package and uses openMP to further speed up code for multi-core systems.
- Applications: Market Basket Analysis; Netflix problem; Identification of genes correlated with a certain disease

Work Experience

Jun – Aug 2015 **Research Intern at Microsoft Research**, Cambridge, UK.
- Implemented social collaborative filtering techniques on *Delve*, Microsoft's document recommender system.
- Carried out exploratory data analysis to investigate eg. structures of social graphs, relation between different types of social ties and similar document consumption, informative patterns in clicks.

Jun – Jul 2012 **Voluntary worker at Congregacion de las Hermanas de la Caridad del Santisimo Sacramento**, Santa Rosa.
- Organised and gave English classes to Peruvian students aged 10-18 in disadvantaged communities
- Classes were delivered in Spanish, thus enhanced my proficiency in the language

Talks

Dec 2014 **Bayesian Networks**, A Marriage of Probability and Graph Theory, in the context of Statistics, Part III seminar, Faculty of Mathematics, University of Cambridge.

Additional Skills/Activities

Languages: Korean(Native), English(Fluent)

French: After A Level, took a one-month immersion course in *Besançon, France* - C1 level

Spanish: DELE B2 - Pass

Leadership: **Undergraduate President of Cambridge Univeristy Korean Society(CUKS)[2012-2013]**, Organised:.

- Social Events: Freshers' Squash, Welcoming Drinks, Annual Dinner
- Cultural Events: Korean Film Night, Participant in the Cambridge World Food Festival
- Academic Events: Talks by Korean politicians/comedians
- Recruitment Events: Samsung,LG,Hanhwa - arranged presentations

Sport: Active player of CUKS Football Club, 2011-2014

Referees

Prof. Yee Whye Teh (PhD Supervisor): **Department of Statistics**, 24-29 St Giles, Oxford OX1 3LB, y.w.teh@stats.ox.ac.uk.

Dr. Rajen Shah (Summer Research Supervisor): **Faculty of Mathematics, Centre for Mathematical Sciences**, Wilberforce Road, Cambridge, CB3 0WA, r.shah@statslab.cam.ac.uk.