

Vidhi R. Lalchand

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University of Cambridge | vr308@cam.ac.uk

EDUCATION

University of Cambridge, Christ's College Dept. of Physics

Ph.D 2017-Current
Research Focus: Bayesian Non-parametrics, Gaussian Processes,
Approximate Inference.

M.Phil Scientific Computing (Distinction) 2016
Numerical Integration, Stochastic Differential Equations,
Advanced Linear Algebra, High Performance Computing
Thesis: *A meta-algorithm for classification using random recursive tree ensembles: A high energy physics application.*

London School of Economics and Political Science (LSE) Dept. of Mathematics

M.Sc. Applicable Mathematics (Distinction) 2010
Probability & Measure theory, Information Theory & Modern Cryptography,
Game Theory, Algorithms & Computation, Mathematical Programming.
Thesis: *Cryptographic Hash Functions.*

University of London (External system)

B.Sc. (Hons) 2008
Major: Mathematics (First)

Computing

Python, R, Java, C++, CUDA

ACADEMIC GRANTS

Doctoral Fellowship for International Students, The Alan Turing Institute, UK 2017-2020
University of London Award for Academic Excellence for External Students 2008

WORK EXPERIENCE

Citadel Securities, LLC
High Frequency Trader, Quantitative Strategies Group Aug 2014 - Sep 2015

- Proprietary trading and market making for pan-European equities.

Credit Suisse Securities (Europe) Limited, London
Quantitative Research Analyst (Electronic FX and Options) June 2012 - July 2014

- Developed statistical models for automated two-way FX market making and options pricing engine.

University College London (UCL)

Research Associate

Nov 2011 - June 2012

- Research focus: Simulation environments for multi-player games.

UBS, London

Quantitative Associate Internship Programme

June 2011 - Sept 2011

PUBLICATIONS

V. R. Lalchand and Carl E Rasmussen. *Approximate inference for fully bayesian gaussian process regression*. In Proceedings of The 2nd Symposium on Advances in Approximate Bayesian Inference, volume 118 of Proceedings of Machine Learning Research, pages 1–12. PMLR, 2020.

V. R. Lalchand. *Extracting more from boosted decision trees: A high energy physics case study*. Second Workshop on Machine Learning and the Physical Sciences. NeurIPS 2019, Vancouver, Canada

V. R. Lalchand, A.C. Faul. *A Fast and Greedy Subset-of-Data (SoD) Scheme for Sparsification in Gaussian processes*. 38th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science & Engineering, July 2018.

P Treleavan, M Galas and V Lalchand. *Algorithmic Trading Review*. Association of Applied Computing Machinery, November 2013.

TALKS

Machine Learning Meets Particle Physics Workshop

Weizmann Institute of Science, Israel

Aug 2019

Hierarchical Probabilistic Mixture Models for density estimation in HEP

Cavendish Laboratory Graduate Student Conference

University of Cambridge

Nov 2018

Bayesian Machine Learning in High Energy Physics

38th International Workshop on Bayesian Inference and Maximum Entropy Methods in Science & Engineering

July 2018

A progressive framework for Gaussian Process Regression

CogX 2018, Research Stage

June 2018

Deconstructing Gaussian Processes.

HONORS & ACTIVITIES

Cambridge University: Women In STEM Interview ([link](#))

Nov 2019

The Cambridge Union: Immigrant Identities Panel ([link](#))

Nov 2019

Presentation to the Scientific Advisory Board, The Alan Turing Institute, London.

Algorithms for rare event classification in High Energy Physics.

June 2018

Asian Voice - *An Unconventional Journey from Banking to Science*. ([link](#))

Aug 2017

Twitter: [@VRLalchand](#)

Medium: [@vidhilalchand](#)