RYAN CHAN

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EDUCATION

The Alan Turing Institute (Research Engineering Team) September 2022 - Present
Research Software Engineer

- The Alan Turing Institute is the national institute for data science and artificial intelligence
- Applying state-of-the-art and novel data science techniques emerging from the Institute
- Collaborating with researchers and industry partners to develop and maintain high-quality, well-tested software for data science

The Alan Turing Institute / University of Warwick September 2018 - September 2022
PhD in Statistics

- Thesis: *Monte Carlo methods for combining sample approximations of distributions*; Examined by Professor Nicolas Chopin (ENSAE Paris) and Dr. Krzysztof Łatuszyński (Warwick)
- University of Warwick has one of the top statistics research groups in the UK. PhD in partnership with The Office of National Statistics (ONS) and The Alan Turing Institute
- Worked on Bayesian analysis for Big Data and developing Monte Carlo methodology for unifying distributed analysis with Prof. Gareth Roberts, Dr. Murray Pollock and Prof. Petros Dellaportas
- Student representative of the 2018/19 doctoral cohort
- Publications:
  - Chan, R.S.Y., Johansen, A.M., Pollock, M., and Roberts, G.O. 2021. Divide-and-Conquer Monte Carlo Fusion. Submitted. *arXiv:2110.07265*.
  - Chan, R.S.Y., and Dai, H. 2020. Discussion of "Quasi-stationary Monte Carlo and the ScaLE algorithm" by Pollock, Fearnhead, Johanson and Roberts. *JRSS B*.

University of Leeds September 2014 - July 2018
MMath, BSc Mathematics - 1st Class Honours (87%)

- Focused on Bayesian statistics, statistical computing & algorithms, stochastic processes
- Good knowledge of statistics/machine learning models and algorithms: predictive modelling, deep learning, recommender systems, topic modelling
- Elected by the Mathematical Society to be treasurer and secretary for the 2017/2018 academic year

PROJECTS

Monte Carlo methods for unifying distributed analysis September 2018 - September 2022

- Developing methodology for combining several sample approximations of distributions into a single coherent unified distribution, with applications in inference for big data
- Created a number of R software packages to implement the methodology developed
- Gained experience in integrating C++ with R using Rcpp

Recommendation Systems for Podcast Discovery (ATI Data Study Group) April 2021

- Participated in a project with Entale to develop podcast recommendation systems
- Built a topic model to recommend new podcasts based on the similarity to the topics that have been of interest to a listener previously
- Gained experience with Natural Language Processing, collaborative filtering, text mining, clustering algorithms, dimension reduction techniques and recommender systems using Python

Bayesian Sports Modelling July 2017 - May 2018

- Investigated the applicability of Bayesian hierarchical models for predicting the outcome of football matches
- Developed models that achieved a greater prediction accuracy than existing models in the literature
- Used R and Stan to implement various models

Automatic Puzzle Solving September 2016 - May 2017

- Investigated the logic of Sudoku puzzles and studied search algorithms to solve and generate Sudoku puzzles
- Designed and implemented a search algorithm that was able to solve all square Sudoku puzzles

EXPERIENCE

Cambridge Spark - Teaching Fellow March 2021 - September 2022

- Developed course materials for students enrolled in Cambridge Spark's *Data Essentials* program providing an introduction to statistics and data analytics

University of Warwick - Teaching Assistant July 2020

- Developed an R course (*Basic R with pointers*) for Mathematics and Statistics students
- Course covered basic programming with R, data visualisation with ggplot2, report writing with R Markdown and building packages in R

AWARDS AND SCHOLARSHIPS

- The Alan Turing Institute Doctoral Studentship (2018-2022)
- The Royal Statistical Society Prize (2018)
- Three time recipient of the "Top 10 scholarship" awarded to the top 10 undergraduates each year at the University of Leeds (2015, 2016, 2017)
- Two time recipient of the "Summer Vacation Bursary Scheme" to undertake a research project at the University of Leeds (2016, 2017)

SKILLS

Programming	Python, Julia, R Statistical (including Rcpp), C++, Stan, HTML, CSS
Other	Experience with parallel HPC and Cloud Computing with Microsoft Azure Experience with Unix/Linux OS environments SQL, Git
Languages	English, Cantonese, Italian (beginner)
Interests	Cycling, Film, Football, Basketball, Sports Analytics, Podcasts

References available on request