Ho Chung Leon Law

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EDUCATION

UNIVERSITY OF OXFORD | PhD in Statistical Science (OxWaSP)
Expected 2015 – 2019 | St Peter's College, Oxford, UK

- PhD Thesis title: Testing and Learning on Bag Data, in the area of machine learning (ML)
- Supervised by Prof. Dino Sejdinovic and Dr. Christopher Yau
- Research interest include kernel methods, Gaussian process, transfer learning, deep learning and Bayesian optimisation

UNIVERSITY OF CAMBRIDGE | Masters, Part III: Mathematical Statistics
Oct 2014 – Aug 2015 | Magdalene College, Cambridge, UK

- Distinction (Top 5%), dissertation on statistical fMRI neuroimaging
- Courses include machine learning, modern statistical methods and applied statistics

IMPERIAL COLLEGE LONDON | Bachelors of Mathematics
Oct 2011 – Aug 2014 | London, UK

- 1st Class (Top 5%), primarily focused on statistical methods, projects in credit risk and leukaemia prediction models

INDUSTRY EXPERIENCE

TENCENT AI LAB | Research Intern
July 2018 – Oct 2018 | Shenzhen, China
Project: Construct new methodology for Bayesian optimisation (BO), used for automatic hyperparameter selection (AutoML)

- Construct a meta-learning framework to allow few-shot BO by transferring from previously seen task.
- As part of the Oxford-Tencent Collaboration on Large Scale Machine Learning

INSTITUTE OF STATISTICAL MATHEMATICS | Research Intern
Feb 2018 – June 2018 | Toyko, Japan
Project: Construct a ML model for predicting malaria incidences, given real data with more than 1 million points

- Collaboration with the Big Data Institute, University Of Oxford
- A new Bayesian framework using Gaussian process for aggregated labels was constructed
- For scalability, variational methods with multiprocessing and GPUs was used
- The project was under the supervision of Prof. Kenji Fukumizu, and the paper has been accepted into NIPS 2018

AMBER AI | Quantitative Research Intern
Dec 2017 – Jan 2018 | Hong Kong
Project: Construct a 1-step, end-to-end stock portfolio machine learning model

- A neural network with a particular structure in TensorFlow was constructed for stocks data
- The model can perform long and short strategy, optimising the Sharpe ratio directly
- The model was tuned and tested on 2016-2018, with Sharpe ratio above 1.5

PRINTASTIC | Data Science Intern
July 2016 – Sept 2016 | London, UK
Project: Prediction of user's intent for purchase over time using App data, to provide targeted interventions

- Smart photobook application records customer's actions and information, with the corresponding timestamps
- Data was cleaned and was used to build a time sequential model using LSTM with label being the intent to purchase
- Model successfully capture signal from the data, and customers were divided into different intent categories
- Results and findings are communicated and API (html) was built for implementation and analysis

STYLOKO | NLP Data Science Intern
June 2016 - July 2016 | London, UK
Project: Cluster fashion words with similar meaning, to construct a similarity between fashion text descriptions

- Fashion item's text description was extracted and preprocessed using standard NLP techniques, before using Word2vec and K-means clustering to identify words with similar meaning
- Algorithm was successful in finding categories of occasion, colours, countries, misspellings etc

PUBLICATIONS

VARIATIONAL LEARNING ON AGGREGATE OUTPUTS WITH GAUSSIAN PROCESSES | NIPS 2018
H. Law, D. Sejdinovic , E. Cameron , T. Lucas , S. Flaxman , K. Battle , K. Fukumizu | Montréal, Canada

- Constructed a variational learning framework that is able to learn from an aggregation of outputs using Gaussian Process. In particular, we proposed new bounds and tractable approximations, leading to improved prediction accuracy and scalability on a fine-scale spatial modelling malaria incidence problem, with over 1 million observations.

BAYESIAN APPROACHES TO DISTRIBUTION REGRESSION | AISTATS 2018
H. Law, D. Sutherland, D. Sejdinovic, S. Flaxman | Canary Islands, Spain

- Constructed a Bayesian distribution regression formalism that accounts for bag size uncertainty, improving the robustness and performance of existing models. The models proposed can be framed in a neural network-style, and we demonstrate its performance on the IMDb-WIKI image dataset for celebrity age classification.
- Oral presentation at NIPS 2017 workshop

TESTING AND LEARNING ON DISTRIBUTIONS WITH SYMMETRIC NOISE INVARIANCE | NIPS 2017
H. Law, C. Yau, D. Sejdinovic | Long Beach, US

- Constructed invariant features of distributions, leading to testing and learning algorithms robust to the impairment of the input distributions with symmetric additive noise. These features lend themselves to a straight forward neural network approach, and can also be easily implemented in many algorithms.

SELECTED EXPERIENCES

REVIEWER FOR AISTATS 2019
Sept 2018 - Dec 2018 | Okinawa, Japan

- Reviewer for the Twenty-Second International Conference on Artificial Intelligence and Statistics

TEACHING: ADVANCED TOPICS IN STATISTICAL MACHINE LEARNING
Jan 2017 - June 2019 | Oxford, UK

- Class tutor for machine learning course for third year undergraduates

PRESIDENT OF THE OXFORD HONG KONG POSTGRADUATE SOCIETY
2017 - 2018 | Oxford, UK

- Raised funds and organised research symposiums in Oxford and Hong Kong for undergraduates and postgraduates

AMAZON-OXWASP BERLIN MACHINE LEARNING WORKSHOP
April 2017 | Berlin, Germany

- Attend one week advanced training course on topics in statistical machine learning and computing for big-data analysis (AWS), designed by senior academics and Amazon researchers

AWARDS

ESPRC AND MRC STUDENTSHIP FOR DPHIL IN STATISTICS AND MACHINE LEARNING
2015 - 2019 | Oxford, UK

NIPS TRAVEL AWARD
Dec 2017 | Long Beach, US

MAGDALENE COLLEGE SCHOLARSHIP
Aug 2015 | Cambridge, UK

WALTON PRIZE
Aug 2015 | Cambridge, UK

MACHINE LEARNING SCHOOL TRAVEL GRANT
Sept 2015 | Kyoto, Japan

G-RESEARCH PRIZE
Aug 2014 | London, UK

LANGUAGES / SOFTWARE

PROGRAMMING
Language (in order of experience)
Python • R • MATLAB
Libraries
TensorFlow

SPOKEN & WRITTEN
Native
English • Cantonese
Business
Mandarin • Japanese

SOFTWARE
Available at
https://github.com/hcllaw
VBAgg (NIPS 2018 paper)
BDR (AISTATS 2018 paper)
Phase Learn (NIPS 2017 paper)