

# 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: Model Based Kernel Approaches, in the area of machine learning (ML)
- Supervised by Prof. Dino Sejdinovic and Dr. Christopher Yau
- Research interest include kernel methods, gaussian process and deep learning

### UNIVERSITY OF CAMBRIDGE | MASTERS, MATHEMATICAL STATISTICS

Oct 2014 – Aug 2015 | Magdalene College, Cambridge, UK

- Distinction (Top 5%)
- Statistical fMRI Neuroimaging Dissertation
- Courses include machine learning, modern statistical methods, stochastic networks and applied statistics

### IMPERIAL COLLEGE LONDON | BACHELORS OF MATHEMATICS

Oct 2011 – Aug 2014 | London, UK

- 1st Class (Top 5%)
- Primarily focused on statistical methods during 3rd year
- Projects in credit risk models and SVM leukaemia prediction models

## INDUSTRY EXPERIENCE

### TENCENT AI LAB | RESEARCH INTERN

July 2018 – Oct 2018 | Shenzhen, China

### INSTITUTE OF STATISTICAL MATHEMATICS | RESEARCH INTERN

Feb 2018 – June 2018 | Tokyo, Japan

Project: Construct a ML model for predicting malaria incidences, given real data with more than 1 million points.

- A new Bayesian framework using Gaussian process for aggregated labels was constructed.
- For scalability, variational methods with multiprocessing GPU was used.
- The project was under the supervision of Kenji Fukumizu, it is currently a NIPS submission.

### 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 consistently above 1.5
- API was setup for model adjustments, different trading strategies, and other loss function

### PRINTASTIC | DATA SCIENCE INTERN

June 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 | 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

### **BAYESIAN APPROACHES TO DISTRIBUTION REGRESSION** | AISTATS 2018

H. Law, D. Sutherland, D. Sejdinovic, S. Flaxman | Canary Islands, Spain

- Construct a Bayesian distribution regression formalism that accounts for bag size uncertainty, improving the robustness and performance of existing models. The models propose 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

- Construct 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

### **PRESIDENT OF OXFORD HONG KONG POSTGRADUATE SOCIETY**

2017 - 2018 | Oxford, UK

- Raised funds and organised a research symposium, where postgraduates from different backgrounds present their research in laymen terms

### **SAMSUNG INDUSTRIAL COLLABORATION WITH ALAN TURING INSTITUTE**

May 2017 | London, UK

- One week collaboration with other researchers to cluster Samsung mobile game users and predict cluster transition

### **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

### **TEACHING: ADVANCED TOPICS IN STATISTICAL MACHINE LEARNING**

Jan 2017 - April 2017 | London, UK

- Class tutor for machine learning course for third year undergraduates

## AWARDS

### **ESPRC AND MRC STUDENTSHIP FOR DPHIL IN STATISTICS AND MACHINE LEARNING**

2015 - 2019 | Oxford, UK

### **MAGDALENE COLLEGE SCHOLARSHIP**

Aug 2015 | Cambridge, UK

### **MACHINE LEARNING SCHOOL TRAVEL GRANT**

Sept 2015 | Kyoto, Japan

### **NIPS TRAVEL AWARD**

Dec 2017 | Long Beach, US

### **WALTON PRIZE**

Aug 2015 | Cambridge, UK

### **G-RESEARCH PRIZE**

Aug 2014 | London, UK

## LANGUAGES / SOFTWARE

### **PROGRAMMING**

Language (in order of experience)

Python • R • MATLAB • Lua • C++

Libraries

TensorFlow • Torch

### **SPOKEN & WRITTEN**

Native

English • Cantonese

Business

Mandarin • Japanese

### **SOFTWARE**

Available at

<https://github.com/hcllaw>

VBAgg (NIPS submission)

BDR (AISTATS 2018 paper)

Phase Learn (NIPS 2017 paper)