

# HO CHUNG LEON LAW

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## EDUCATION

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### University of Oxford - St Peter's College, UK

2015-2019

#### PhD in Statistical Science (OxWaSP Program)

- PhD Thesis title: Model Based Kernel Approaches, in the area of machine learning.
- Supervised by Prof. Dino Sejdinovic and Prof. Christopher Yau.
- Research interest include kernel methods, gaussian process and deep learning.
- Awarded ESPRC and MRC Studentship for DPhil in Statistics and Machine Learning.

### University of Cambridge - Magdalene College, UK

2014-2015

#### Part III: Master of Advanced Study, Mathematical Statistics

##### - Distinction (Top 5%)

- Awarded College Scholarship and Walton Prize for performance.
- Dissertation on Statistical fMRI Neuroimaging (Distinction).
- Related courses include machine learning, modern statistical methods, stochastic networks.

### Imperial College London, UK

2011-2014

#### BSc Mathematics

##### - 1st Class (Top 5%)

- Awarded G-Research Prize for Academic Excellence.
- Projects in credit risk models and SVM leukaemia prediction models.

## INDUSTRY EXPERIENCE

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### Amber AI, HK (Quantitative Hedge Fund)

Dec 2017-Jan 2018

#### - Quantitative Research Intern

**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, London, UK (Intelligent Photobook App Company)

June-Sept 2016

#### - Data Science Intern (As part of the OxWaSP program)

**Project:** Prediction of user's intent for purchase over time using App data, to provide targeted interventions.

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

**- Data Science Intern**

**Project:** Cluster fashion words with similar meaning, to construct a similarity measure between 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**


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**Testing and Learning with Symmetric Noise Invariance (First Author)** 2017

*Advances in Neural Information Processing Systems (NIPS) 2017, Long Beach, US*

<https://arxiv.org/abs/1703.07596>

- 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.

**Bayesian Approaches to Distribution Regression (First Author)** 2018

*Artificial Intelligence and Statistics (AISTATS) 2018, Canary Islands*

*NIPS 2017 workshop (Oral)*

<https://arxiv.org/abs/1705.04293>

- 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.

**RELATED COURSES/WORKSHOPS**


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**Amazon-OxWaSP Berlin Machine Learning Workshop (1 week)** April 2017

- Attend advanced training course on topics in Statistical Machine Learning and Computing for big-data analysis (AWS), designed by senior academics and Amazon researchers.

**Samsung Industrial Collaboration with Alan Turing Institute (1 week)** May 2017

**Academy for PhD Training in Statistics (3 weeks)** Feb 2016

**Machine Learning Summer School at University Of Kyoto (1 week)** Sept 2015

**OTHER ACTIVITIES**


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**President of the Hong Kong Oxford Scholars Association (HK Postgraduate Society)** 2017-2018

**Treasurer and squad member of the Oxford University Table Tennis Society** 2016-2017

**SKILLS**


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**Programming / Libraries :** Python, Tensorflow, R, Matlab, SQL, Torch, C++, Lua (In order of experience)

**Languages:** English (Native), Cantonese (Native), Mandarin (Intermediate), Japanese (Basic)