Man Fung (Heman) LEUNG

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RESEARCH INTERESTS

Time Series, Statistical Computing, Causal Inference, Machine Learning

EDUCATION

The Chinese University of Hong Kong (CUHK)

M.Phil. in Risk Management Science — Jul 2021 (Expected)

Thesis: *A General Theory of Recursive Nonparametric Estimation*
Advisor: Kin Wai CHAN
CGPA: 4.00/4.00

B.Sc. in Quantitative Finance and Risk Management Science, First Class Honors — Jul 2019

Minor: Statistics
CGPA: 3.76/4.00

University of California, Davis

Academic Exchange, UC Education Abroad Program — Sep – Dec 2017

RESEARCH PROJECTS

General and Super-optimal Recursive Estimators of Long-run Variance — Jan 2020 – Present
Supervised by Kin Wai CHAN — *Available upon request*

- Proposes online estimators with super-optimal MSE compared with non-recursive benchmarks
- Derives the first sufficient condition for $O(1)$-time or space update, and the first mini-batch estimator
- Discusses applications in Markov chain Monte Carlo and stochastic gradient descent

A Remark About a Learning Risk Lower Bound — Mar – Oct 2020
Collaborated with Yiqi LIN and Nicolas WICKER — *Submitted*

- Corrected a learning risk lower bound in the non-realizable case appearing in some classical textbooks

PRESENTATION

Diagnosing Learning Algorithms with Super-optimal Recursive Estimators — Dec 2020
ICSA 2020 Applied Statistics Symposium — *Poster*

SOFTWARE

rlaser: an R package for Recursive Long-run Variance Estimation — Available upon request

TEACHING EXPERIENCE

Department of Statistics, CUHK — Sep 2019 – Present
Teaching Assistant

- Selected as the teaching assistant for a postgraduate core course about Monte Carlo simulation
- Published diverse learning materials for both undergraduate and postgraduate on personal website
- Led and presented in reading group meetings on ‘Asymptotic Theory in Time Series’ in 2020

PROFESSIONAL SERVICE

Hong Kong Statistical Society — Jun 2020
Statistical Project Competition for Secondary School Students — *Adjudicator*

WORK EXPERIENCE

Institute of Software, Chinese Academy of Sciences Jun – Jul 2019
Research Intern

- Analyzed the ideas behind different cutting-edge image classification networks
- Designed a deep hand pose detection model with 98.6% validation accuracy using Python
- Extended the developed model to a web-based application with the other two teammates

Department of Finance, CUHK Sep – Dec 2018
Practicum

- Explored and extracted high-level features from volatility surface using machine learning
- Hypothesized and tested the relationship between stock return and features in multiple models
- Developed a trading algorithm to profit from the tested relationship for Contrendian Limited

Research Department, Hong Kong Monetary Authority Jun – Aug 2018
Summer Intern

- Investigated the impact of IPO on interbank and exchange rate markets using econometrics
- Optimized research procedures by employing automation and NLP with JavaScript and R
- Conducted preliminary analysis in a SME financing project collaborated with the FSB

Risk Advisory, Ernst & Young Advisory Limited May – Aug 2017
Summer Intern

- Developed an impairment analytics tool in an IFRS 9 project for CCB (Asia) with VBA
- Designed and conducted statistical tests and adjustments on PD and LGD models
- Collaborated with other teams to prepare disclosure guidance and strategic advice

SELECTED AWARDS

Centaline Charity Fund Scholarship	Sep 2015 – Present
CLP Centenary Scholarship	Aug 2018
Best Essay Award 2015-16, Silver Award	Mar 2017
Peak Time 2016, 1st Runner-up	Apr 2016

COMMUNITY SERVICE

Hong Kong BioBlitz 2015 Sep – Dec 2015
Social Media Administrator and Volunteer

- Assisted in promoting and organzing the first ecological quick check in HK to protect biodiversity

TECHNICAL SKILLS

Programming	R, C/C++, Python, VBA, JavaScript, Java
Publishing	R Markdown, TeX/LaTeX, HTML 5
Tools	MS Office, Eviews, Bloomberg Terminal, GIMP