LIU Peng   liupeng@smu.edu.sg

RESEARCH INTERESTS

- Generalization in deep learning, sparse estimation, portfolio optimization using reinforcement learning, financial text mining, risk management, Bayesian optimization

ACADEMIC EXPERIENCES

LEE KONG CHIAN SCHOOL OF BUSINESS, SMU   **SINGAPORE**

Assistant Professor of Quantitative Finance (Practice)   Jul 2022 – Present

INSTITUTE OF OPERATIONS RESEARCH AND ANALYTICS, NUS   **SINGAPORE**

Adjunct Research Fellow   Mar 2022 – Present

NANYANG BUSINESS SCHOOL, NTU   **SINGAPORE**

Part-Time Lecturer   Jan 2021 – Jan 2022

NUS BUSINESS SCHOOL, DEPARTMENT OF DECISION SCIENCES   **SINGAPORE**

Teaching/Research Assistant   Oct 2014 – Apr 2015

CORPORATE EXPERIENCES

STANDARD CHARTERED BANK   **SINGAPORE**
Manager, Advanced Analytics   Apr 2019 – Jun 2022

MARINA BAY SANDS   **SINGAPORE**
Senior Data Scientist, Gaming Optimization   Sep 2018 – Apr 2019
Manager, Hotel Analytics   Aug 2015 – Aug 2018

IBM   **SHENZHEN, CHINA**
Technical Analyst   Jan 2013 – Jul 2014

EDUCATION

NATIONAL UNIVERSITY OF SINGAPORE   **SINGAPORE**
Ph.D. in Statistics and Data Science (Part-time)   Aug 2016 - Aug 2021

NATIONAL UNIVERSITY OF SINGAPORE   **SINGAPORE**
M.S. in Business Analytics (Full-time)   July 2014 - Aug 2015

BEIJING TECHNOLOGY AND BUSINESS UNIVERSITY   **BEIJING, CHINA**
B. Eng. in Electronic Science and Technology (Full-time)   Sep 2008 - Jun 2012

AWARDS AND CERTIFICATES

- Best Ph.D. Graduate Research Award, Department of Statistics and Data Science, NUS, 2020
- National Scholarship of China, School of Computer and Information Engineering, BTBU, 2009
- Google TensorFlow Developer Certificate, 2020 - 2023
- Project Management Professional, 2013 - 2017

PUBLICATIONS

- Chen Zichuan, **Peng Liu**. Towards Better Data Augmentation using Wasserstein Distance in Variational Auto-encoder, IEEE International Conference in Image Processing, 2022, forthcoming
- **Peng Liu**, Ying Chen, Chung-Piaw Teo. Limousine Service Management: Capacity Planning with Predictive Analytics and Optimization, *INFORMS Journal on Applied Analytics,* 2021, Vol. 51, No. 4
- Haoling Chen, **Peng Liu**. Stock Return Prediction using Financial News: A Unified Sequence Model based on Hierarchical Attention and Long-Short Term Memory Networks, IEEE International Conference on Signal Processing and Machine Learning, 2021
- Ying Chen, **Peng Liu**, Chung-Piaw Teo. Regularized Text Logistic Regression: KeyWord Detection and Sentiment Classification for Online Reviews, WIP

- **Peng Liu**, Ying Chen. SWaGEL: A Sparse Geometric Regularization framework for Financial Text Mining, WIP

BOOKS
- **Peng Liu**, Towards Better Generalization in Deep Learning, *Manning Publications*, forthcoming
- **Peng Liu**, Practical Bayesian Optimization with Python, *Apress*, forthcoming
- **Peng Liu**, The Statistics and Machine Learning with R Workshop*, Packt,* forthcoming

CONFERENCE PRESENTATIONS
- Constrained and Partially Regularized Logistic Regression: An Integrated Framework on Human-in-the-Loop Credit Risk Modelling, *Fourteenth Annual Risk Management Conference*, Singapore 2021
- Improving Credit Scorecard Calibration Using Regularized Logistic Regression and Bayesian Optimization, *Fifth PKU-NUS Annual International Conference on Quantitative Finance and Economics*, Singapore, 2021

PROJECT HIGHLIGHTS

IMAGE RECOGNITION
- Fast object recognition and instance segmentation using Mask-CNN architecture with ResNet101 backbone which is implemented using Keras with Tensorflow as backend, for people counting and customer behavior analysis.
- Fast facial expression recognition and video-based surveillance using deep metric learning for staff performance analysis.

NATURAL LANGUAGE UNDERSTANDING
- Ultra-high dimensional statistical modeling and machine learning with regularization for systematic extraction of meaningful features and accurate classification of customer comments
- Generic conversational chatbot for accurate intent classification, entity extraction, and action prediction using recurrent neural networks to the model word vector representation of sentences, used to enable efficient information query via natural language.

ARTIFICIAL INTELLIGENCE
- Robust forecasting and optimization backed decision support engine, which analyses business demand and supply in real-time, recalibrates and improves via online learning, and provides dynamic recommendations on resource scheduling following a Bayesian approach on the probability distribution of parameters and ensemble type of modeling