

Professor Liang, Yong

Dr. Neher's Biophysics Laboratory for Innovative Drug Discovery

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Academic Qualification:

Ph.D. in Computer Science, The Chinese University of Hong Kong, 2003

MS in Applied Mathematics, Xi'an Jiaotong University, 1999

BS in Applied Mathematics, Xi'an Jiaotong University, 1996

Teaching Area

Data Warehousing and Data Mining

Principles of Databases

Database Programming

Artificial Intelligence

Special Topics in New Computer Technology

Research Area

Artificial Intelligence, Machine Learning, Big Data, Bioinformatics

Working Experience

2020-present Professor, Dr. Neher's Biophysics Laboratory for Innovative Drug Discovery, MUST

2019-present Professor, Institute of Systems Engineering, MUST

2015-present Head, Research and Technology Administration Office, MUST

2014-2019 Professor, Faculty of Information Technology, MUST

2009-2014 Associate Professor, Faculty of Information Technology, MUST

2007- 2009 Assitant Professor, Faculty of Information Technolgy, MUST

2004- 2006 Postdoctoral Fellow, The Chinese University of Hong Kong

Professional Certification and Awards

Excellent Instructor of Contemporary Undergraduate Mathematical Contest in Modeling (2011)

Postgraduate Award of the Macao Science and Technology Award, Supervisor. (2014, 2020)

Second Prize, Contemporary Undergraduate Mathematical Contest in Modeling,
CUMCM, Supervisor (2009, 2010, 2011, 2013, 2014, 2015)

Gold Prize, China Pan-Pearl River Delta Region University IT Project Competition, Supervisor (2010)

Professional Society Membership

Member of Association for Computing Machinery (ACM)

Member of Institute of Electrical and Electronics Engineers (IEEE)

Member of China Computer Federation (CCF)

Member of China Society for Industrial and Applied Mathematics (CSIAM)

Committee of Chinese Society of Computer Mathematics (CSCM)

Selected Publication (* Corresponding Author)

Zi-Yi Yang, Nai-Qi Wu, **Yong Liang***, Hui Zhang, Yan-Qiong Ren
SMSPL: Robust Multimodal Approach to Integrative Analysis of Multiomics Data
IEEE Transactions on Cybernetics, 2020

Rui Miao, Hao-Heng Chen, **Yong Liang***
Beyond the limitation of targeted therapy: Improve the application of targeted drugs combining genomic data with machine learning, *Pharmacological Research*, 2020

Li Zheng, Lei Yang, **Yong Liang***
A conjugate gradient projection method for solving equations with convex constraints
Journal of Computational and Applied Mathematics, 2020

Hai-Hui Huang, **Yong Liang***
A novel Cox proportional hazards model for high - dimensional genomic data in cancer prognosis
IEEE/ACM Transactions on Computational Biology and Bioinformatics , 2019

Liang-Yong Xia, Zi-Yi Yang, **Yong Liang***
Improved Prediction of Drug-Target Interactions Using Self-Paced Learning with Collaborative Matrix Factorization, *Journal of Chemical Information and Modeling*, 2019

Xiao-Ying Liu, Sai Wang, Hui Zhang, Hai Zhang, Zi-Yi Yang, **Yong Liang***
Novel Regularization Method for Biomarker Selection and Cancer Classification
IEEE/ACM Transactions on Computational Biology and Bioinformatics , 2019

Liang-Yong Xia, Yu-Wei Wang, De-Yu Meng, Xiao-Jun Yao, Hua Chai, **Yong Liang***
Descriptor selection via log-sum regularization for the biological activities of chemical structure
International Journal of Molecular Sciences, 2018

Hong-Kun Jiang, **Yong Liang***
The L 1/2 regularization network Cox model for analysis of genomic data
Computers in Biology and Medicine , 2018

Hai-Hui Huang, **Yong Liang***
Hybrid L 1/2 + 2 Method for Gene Selection in the Cox Proportional Hazards Model
Computer Methods and Programs in Biomedicine , 2018

Jing-Rong Wang, Wei-Na Gao, Rudolf Grimm, Shibo Jiang, **Yong Liang**
A method to identify trace sulfated IgG N-glycans as biomarkers for rheumatoid arthritis
Nature Communacations, 2017

Hai-Hui Huang, **Yong Liang***, Xiao-Ying Liu and Hui-Min Li
Molecular pathway identification using a new L1/2 solver and biological network-constrained mode
International Journal of Data Mining and Bioinformatics, 2017

Wei Qu, **Yong Liang***
Stability and convergence of the Crank-Nicolson scheme for a class of variable-coefficient tempered fractional diffusion equations, *Advances in Difference Equations* , 2017

Yong Liang, Hua Chai, Xiao-Ying Liu, Zong-Ben Xu, Hai Zhang and Kwong-Sak Leung
Cancer survival analysis using semi-supervised learning method based on Cox and AFT models with $L_{1/2}$ regularization, *BMC Med Genomics*, 2016

Hua Chai, Hai-Hui Huang, Hong-Kun Jiang, **Yong Liang*** and Liang-Yong Xia
Protein-protein interaction network construction for cancer using a new $L_{1/2}$ -penalized Net-SVM model, *Genetics and Molecular Research*, 2016

Hua Chai, **Yong Liang***, Xiao-Ying Liu
 $L_{1/2}$ regularization approach for survival analysis in the accelerated failure time model
Computers in Biology and Medicine, 2015

Hai-Hui Huang, **Yong Liang*** and Xiao-Ying Liu
Network-based logistic classification with an enhanced $L_{1/2}$ solver reveals biomarker and subnetwork signatures for diagnosing lung cancer, *BioMed Research International*, 2015

Hai-Hui Huang, Xiao-Ying Liu, **Yong Liang***, Hua Chai and Liang-Yong Xia
Identification of 13 blood-based gene expression signatures to accurately distinguish tuberculosis from other pulmonary diseases and healthy controls, *Bio-Medical Materials and Engineering*, 2015

Xin-Ze Luan, **Yong Liang***, Cheng Liu, Kwong-Sak Leung, Tak-Ming Chan, Zong-Ben Xu
A novel $L_{1/2}$ regularization shooting algorithm for Cox's proportional hazards model
Soft Computing, 2014

Ge-Jin Chu, **Yong Liang***, Jia-Xuan Wang
Novel harmonic regularization approach for variable selection in Cox's proportional hazards
Computational and Mathematical Methods in Medicine, 2014

Bo-Wen Zhang, Hua Chai, Zi-Yi Yang, **Yong Liang***, Ge-Jin Chu, Xiao-Ying Liu
Application of $L_{1/2}$ regularization logistic method in heart disease diagnosis
Bio-Medical Materials and Engineering, 2014

Yong Liang, Cheng Liu, Xin-Ze Luan
Sparse logistic regression with a $L_{1/2}$ penalty for gene selection in cancer classification,
BMC Bioinformatics, 14:198, 2013

Cheng Liu, **Yong Liang***, Xin-Ze Luan, Zong-Ben Xu and Hai Zhang,
The $L_{1/2}$ regularization method for variable selection in the Cox's model
Applied Soft Computing, 2013

Hai Zhang, **Yong Liang**, Zong-Ben Xu, Xiang-Yu Chang
Compressive sensing with noise based on SCAD penalty
Acta Mathematica Sinica, 2013

Hai Zhang, **Yong Liang**, Hai-Liang Gou, Zong-Ben Xu
The essential ability of sparse reconstruction of different compressive sensing strategies
Science China. Information Sciences, 2012

Hai Zhang, Zong-Ben Xu, Yao Wang, Xiang-Yu Chang, **Yong Liang**
A sharp nonasymptotic bound and phase diagram of L1/2 regularization
Acta Mathematica Sinica, 2012

Yong Liang, Kwong Sak Leung, Adaptive elitist-population based genetic algorithm for multimodal function optimization, *Applied Soft Computing*, Vol.11, no 1, pp. 2017-2034, 2011

Zong-Ben Xu, Hai Zhang, Yao Wang, Xiang-Yu Chang, **Yong Liang**
L1/2 regularization
Science China. Information Sciences, 2010

Yong Liang, Kwong Sak Leung and Tony S. K. Mok, Evolutionary Drug Scheduling Models with Different Toxicity Metabolism in Cancer Chemotherapy, *Applied Soft Computing*, Vol.8, no 1, pp. 140-149, 2008

Yong Liang, Kwong Sak Leung and Zong Ben Xu, A Novel Splicing/Decomposable Binary Encoding and Its Operators for Genetic and Evolutionary Algorithms, *Applied Mathematics and Computation*, Vol. 190, pp. 887-904, 2007

S. M. Tse, **Yong Liang**, Kwong Sak Leung, K. H. Lee and Tony S. K. Mok, A Novel Memetic Algorithm for Multiple Drugs Cancer Chemotherapy Schedule Optimization, *IEEE Transactions on Systems, Man and Cybernetics - Part B*, Vol.37, no.1, pp. 84-91, 2007

Yong Liang, Kwong Sak Leung and Tony S. K. Mok, A Novel Evolutionary Drug Scheduling Model in Cancer Chemotherapy, *IEEE Transactions on Information Technology in BioMedicine*, Vol. 10, no. 2, pp. 237-245, 2006