Ke Li

Curriculum Vitae

Natural Computation Group
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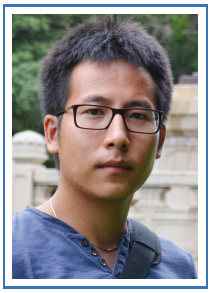

Research Interests

theme: Computational intelligence
Large-scale optimization
Search-based software engineering
Data-driven optimization and surrogate modeling
auxiliary: Statistical machine learning and data mining

Education

2010 – 2014 **Doctor of Philosophy**, *Department of Computer Science*, City University of Hong Kong.
2007 – 2010 **Masters of Engineering**, *College of Information and Engineering*, Xiangtan University.
2003 – 2007 **Bachelor of Engineering**, *College of Information and Engineering*, Xiangtan University.

Working Experiences

2015 – now **Research Fellow**, *School of Computer Science*, University of Birmingham.
2014 – 2015 **Postdoctoral Research Associate**, *Department of Electrical and Computer Engineering*, Michigan State University.
2013 – 2014 **Research Associate**, *Department of Computer Science*, City University of Hong Kong.
2013 – 2014 **Visiting Scholar**, *Department of Electrical and Computer Engineering*, Michigan State University.

Publications

Refereed Journal Articles

NEUCOM Haoran Xie, Xiaodong Li, Tao Wang, Li Chen, **Ke Li**, Fu Lee Wang, Yi Cai, Qing Li, Huaqing Min, Personalized Search for Social Media via Dominating Verbal Context. Neurocomputing, 172: 27–37, 2016. (SCI IF=2.083)

IEEE TEVC **Ke Li**, Kalyanmoy Deb, Qingfu Zhang, Sam Kwong, An Evolutionary Many-Objective Optimization Algorithm Based on Dominance and Decomposition. IEEE Transaction on Evolutionary Computation, 19(5): 694–716, 2015. (SCI IF=3.654) (**Top 10 popular article in IEEE TEVC**)

IEEE TCYB **Ke Li**, Sam Kwong, Qingfu Zhang, Kalyanmoy Deb, Interrelationship-based Selection for Decomposition Multiobjective Optimization. IEEE Transactions on Cybernetics, 45(10): 2076–2088, 2015. (SCI IF=3.469) (**Top 10 popular article in IEEE TCYB**)

INS **Ke Li**, Sam Kwong, Kalyanmoy Deb, A Dual Population Paradigm for Evolutionary Multiobjective Optimization. Information Sciences, 309: 50–72, 2015. (SCI IF=4.038)

IEEE TEVC **Ke Li**, Qingfu Zhang, Sam Kwong, Miqing Li, Ran Wang, Stable Matching Based Selection in Evolutionary Multiobjective Optimization. IEEE Transactions on Evolutionary Computation, 18(6): 909-923, 2014. (SCI IF=3.654) (**Top 10 popular article in IEEE TEVC**)

NEUCOM Jingjing Cao, Sam Kwong, Ran Wang, Xiaodong Li, **Ke Li**, Xiangfei Kong, Class-Specific Soft Voting based Multiple Extreme Learning Machines Ensemble. Neurocomputing, 149: 275-284, 2015. (SCI IF=2.083)

NEUCOM **Ke Li**, Sam Kwong, A General Framework for Evolutionary Multiobjective Optimization via Manifold Learning. Neurocomputing, 146: 65-74, 2014. (SCI IF=2.083)

IEEE TCYB Miqing Li, Shengxiang Yang, **Ke Li**, Xiaohui Liu. Evolutionary algorithms with segment-based search for multiobjective optimization problems. IEEE Transactions on Cybernetics, 44(8): 1295-1313, 2014. (SCI IF=3.469)

IEEE TEVC **Ke Li**, Álvaro Fialho, Sam Kwong, Qingfu Zhang. Adaptive Operator Selection with Bandits for Multiobjective Evolutionary Algorithm Based on Decomposition. IEEE Transactions on Evolutionary Computation, 18(1): 114-130, 2014. (SCI IF=3.654) (**Top 10 popular article in IEEE TEVC**)

IJFUKS **Ke Li**, Ran Wang, Sam Kwong, Jingjing Cao. Evolving Extreme Learning Machine Paradigm with Adaptive Operator Selection and Parameter Control. International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems, 21(supp02): 143-154, 2013. (SCI IF=0.619)

INS **Ke Li**, Sam Kwong, Ran Wang, Kit-Sang Tang, Kim-Fung Man. Learning Paradigm Based on Jumping Genes: A General Framework for Enhancing Exploration in Evolutionary Multiobjective Optimization. Information Sciences, 226(1): 1-22, 2013. (SCI IF=4.038)

INS **Ke Li**, Sam Kwong, Jingjing Cao, Miqing Li, Jinhua Zheng, Ruimin Shen. Achieving Balance Between Proximity and Diversity in Multi-objective Evolutionary Algorithm. Information Sciences, 182(1): 220-242, 2012. (SCI IF=4.038)

ICIC EL **Ke Li**, Jinhua Zheng, Miqing Li, Cong Zhou, Hui Lv. A Novel Slicing Based Algorithm to Calculate Hypervolume for Multi-Objective Optimization Problems. ICIC Express Letters: An International Journal of Research and Surveys, 4(4): 1113-1120, 2010.

Conference Proceedings

SMC 2015 M. Wu, S. Kwong, Q. Zhang, K. Li, R. Wang, B. Liu, Two-Level Stable Matching-Based Selection in MOEA/D, In "SMC'15: Proc. of 2015 IEEE Conference on Systems, Mans and Cybernetics", accepted for publication, 2015

CEC 2015 **Ke Li**, Kalyanmoy Deb, Qingfu Zhang. Evolutionary Multiobjective Optimization with Hybrid Selection Principles. In "CEC'15: Proc. of 2015 IEEE Congress on Evolutionary Computation", IEEE Press: p. 900-907, May 2015.

SMC 2012 **Ke Li**, Sam Kwong, Ran Wang, Jingjing Cao, Imre J. Rudas. Multi-Objective Differential Evolution with Self-Navigation. In "SMC'12: Proc. of 2012 IEEE International Conference on Systems, Mans and Cybernetics", IEEE Press: p. 508-513. October 2012.

ICMLC 2012 Jingjing Cao, Sam Kwong, Ran Wang, **Ke Li**. A weighted voting method using minimum square error based on Extreme Learning Machine. In "ICMLC'12: Proc. of 2012 IEEE International Conference on machine learning and cybernetics", IEEE Press: p. 411-414. July 2012.

SMC 2011 Jingjing Cao, Hanli Wang, Sam Kwong, **Ke Li**. Combining interpretable fuzzy rule-based classifiers via multi-objective hierarchical evolutionary algorithm. In "SMC'11: Proc. of 2011 IEEE International Conference on Systems, Mans and Cybernetics", IEEE Press: p. 1771-1776. October 2011.

GECCO 2011 **Ke Li**, Sam Kwong, Kim-Fung Man. JGBL paradigm: A Novel Strategy to Enhance the Exploration Ability of NSGA-II. In "GECCO'11: Proc. of the 12th Annual Conference on Genetic and Evolutionary Computation", ACM Press: p. 99-100. July 2011.

LION 2011 **Ke Li**, Álvaro Fialho, Sam Kwong. Multi-Objective Differential Evolution with Adaptive Control of Parameters and Operators. In "LION'11: Proc. of the 5th International Conference on Learning and Intelligent OptimizatioN", Springer Verlag, LNCS, p. 473-487, January 2011.

PPSN 2010 Miqing Li, Jinhua Zheng, **Ke Li**, Qizhao Yuan, Ruimin Shen. Enhancing Diversity for Average Ranking Method in Evolutionary Many-Objective Optimization. In "PPSN'10: Proc. of the 11th International Conference on Parallel Problem Solving from Nature", Springer, LNCS, Vol. 6238: p. 647-656. September 2010.

GECCO 2010 Miqing Li, Jinhua Zheng, Ruimin Zhen, **Ke Li**, Qizhao Yuan. A Grid-based Fitness Strategy for Evolutionary Many-Objective Optimization. In "GECCO'10: Proc. of the 11th Annual Conference on Genetic and Evolutionary Computation", ACM Press: p. 463-470. July 2010. (**Nominated as best paper candidate**)

SMC 2009 **Ke Li**, Jinhua Zheng, Miqing Li, Cong Zhou, Hui Lv. A Novel Algorithm for Non-dominated Hypervolume-based Multiobjective Optimization. In "SMC'09: Proc. of 2009 IEEE International Conference on Systems, Mans and Cybernetics", IEEE Press: p. 5220-5226. December 2009.

SMC 2009 Miqing Li, Jinhua Zheng, **Ke Li**, Jun Wu, Guixia Xiao. An Spanning Tree Based Method For Pruning Non-Dominated Solutions in Multi-Objective Optimization Problems. In "SMC'09: Proc. of 2009 IEEE International Conference on Systems, Mans and Cybernetics", IEEE Press: p. 4882-4887. December 2009.

ICNC 2009 Cong Zhou, Jinhua Zheng, **Ke Li**, Hui Lv. Objective Reduction based on the Least Square Method for Large-dimensional Multiobjective Optimization Problem. In "ICNC'09: Proc. of the 5th International Conference on Natural Computation", IEEE Press: p. 350-354. August 2009.

ICNC 2009 Hui Lv, Jinhua Zheng, Jun Wu, Cong Zhou, **Ke Li**. The Convergence Analysis of Genetic Algorithm based on Space Mating. In "ICNC'09: Proc. of the 5th International Conference on Natural Computation", IEEE Press: p. 557-562. August 2009.

CSIE 2009 **Ke Li**, Jinhua Zheng. An Improved Multi-objective Evolutionary Algorithm based on Differential Evolution. In "CSIE'09: Proc. of 2009 WRI World Congress on Computer Science and Information Engineering", IEEE Press: p. 825-830. April 2009.

Under Review

K. Li, K. Deb, Performance Assessment for Preference-Based Evolutionary Multi-objective Optimization Using Reference Points, January, 2016.

K. Li, K. Deb, Q. Zhang, Q. Zhang, Efficient Non-domination Level Update Approach for Steady-State Evolutionary Multiobjective Optimization, December, 2015.

Working Paper

K. Li, K. Deb, Q. Zhang, X. Yao, Integration of Preferences in Decomposition-Based Evolutionary Multi-Objective Optimization, 2016.

Research Grants

2012 – 2018 EPSRC (Grant No. EP/J017515/1) "DAASE: Dynamic Adaptive Automated Software Engineering", Key Member, GBP 6,834,903

2013 – 2017 EPSRC (Grant No. EP/K001523/1) "Evolutionary Computation for Dynamic Optimisation in Network Environments", Key Member, GBP 512,325

2014 – 2017 Hong Kong Research Grants Council General Research Funding (Grant No. 11205314) "Stable Matching Theory in Multiobjective Evolutionary Algorithm based on Decomposition (MOEA/D)", Co-PI at large, HKD 692,894

2015 – 2018 National Natural Science Foundation of China (Grant No. 61502408): "Research on Key Problems in Dynamic Environment Multi-objective Evolutionary Optimization", Co-PI, RMB 250,000

Awards

2013 Research Tuition Scholarship of City University of Hong Kong

2013 College of Science and Engineering Student Research Excellence Awards (First Class)

2012 College of Science and Engineering Student Research Excellence Awards (Second Class)
2012 Research Tuition Scholarship of City University of Hong Kong
2010 – 2013 Studentship of City University of Hong Kong
2010 Outstanding Master Thesis of Xiangtan University
2010 Outstanding Graduate of Hunan Province
2010 Outstanding Graduate of Xiangtan University
2010 President Scholarship of Xiangtan University
2009 "Lian Xin Yong Yi" Computer Science Scholarship
2009 Three-good Student of Xiangtan University
2009 Prize of Excellent Team in Innovation of Science and Technology
2009 Excellent Member of The Communist Youth League for Graduate Student
2007 Excellent Undergraduate Dissertation of Xiangtan University
2007 Outstanding Graduate of Xiangtan University

Academic Supervision

2015 – now Renzhi Chen (PhD) at the School of Computer Science, University of Birmingham (Co-supervising with Prof. Xin Yao)
2015 – now Joseph Billingsley (Undergraduate) at the School of Computer Science, University of Birmingham (Co-supervising with Prof. Xin Yao)
2014 – 2015 Mengyuan Wu (PhD) at the Department of Computer Science, City University of Hong Kong (Co-supervising with Prof. Sam Kwong)
2014 – 2015 Zhichao Lu (PhD) at the Department of Electrical and Computer Engineering, Michigan State University (Co-supervising with Prof. Kalyanmoy Deb)

Teaching Experiences

2012/2013 Introduction to Internet and Programming (CS1303), Semester B
2012/2013 Computer Networks and Internets (CS5222), Semester A
2011/2012 Object-Oriented Programming (CS2332), Semester B
2011/2012 Computer Networks and Internets (CS5222), Semester A
2010/2011 Software Engineering (CS5351), Semester B
2010/2011 Software Quality Engineering (CS5348), Semester A

Professional Services

Memberships

2010 – 2014 IEEE student member
2013 – now ACM professional member

Editorship

2016 Special Issue of Neurocomputing Journal on Recent Advances in Semantic Computing and Personalization

Reviewer of Journals

IEEE Transactions on Evolutionary Computation
IEEE Transactions on Cybernetics
IEEE Transactions on Industrial Electronics
IEEE Transactions on Knowledge and Data Engineering
IEEE Transactions on Vehicular Technology

European Journal of Operational research

Frontiers of Computer Science

Information Sciences

Expert Systems with Applications

Neurocomputing

Memetic Computing

Soft Computing

Reviewer of Conferences

The 2014 to 2016 IEEE Congress of Evolutionary Computation (CEC'14 and CEC'16)

The 2014 to 2016 Genetic and Evolutionary Computation Conference (GECCO'14 to GECCO'16)

The 2013 to 2015 IEEE International Conference on Machine Learning and Cybernetics (ICMLC'13 to ICMLC'15)

The 4th International Conference on Swarm, Evolutionary and Memetic Computing (SEMCCO' 13)

Program Committee

The 2014 to 2016 Genetic and Evolutionary Computation Conference (GECCO'14 and GECCO'16)

The 2013 to 2015 IEEE International Conference on Machine Learning and Cybernetics (ICMLC'13 to ICMLC'15)

The 2nd International Conference on Soft Computing & Machine Intelligence (ISCMI'15)

Computer skills

Programming:	Java, MATLAB, C/C++, Python, HTML, CSS
Scientific:	MATLAB, OriginLab
Typography:	LaTeX, LibreOffice/OpenOffice, Microsoft Office

References

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