

林一施

+86 18676701407
yishilin14@gmail.com
dango.rocks

教育背景

- 2013/8–2017/7 **博士**，香港中文大学计算机科学与工程学系
研究方向：网络科学（社交与信息网络中的算法和数据挖掘、大规模图算法）
导师：吕自成教授（Prof. John C.S. Lui）
- 2009–2013 **工学学士**，中国科学技术大学计算机科学与技术学院
GPA: 4.01/4.30，专业排名: 1/106

工作经历

- 2017/7—至今 **研究员**，腾讯-微信事业群
- 2015/7–2015/9 **研究实习生**，微软亚洲研究院理论组
研究项目：社交网络中影响力传播的优化与提升
实习导师：陈卫
- 2013–2016 **助教**，香港中文大学
负责本科及研究生课程的课程讲解、作业设计及答疑
参与课程：机器学习概论、网络科学导论、工程数学、程序设计

研究项目

- ICDE '17 **社交网络中影响力传播的优化与提升：算法及分析**
- 研究当已知社交网络的结构和病毒式营销的“种子用户”时，如何制定促销策略（如通过提供折扣以提高部分用户的购买概率），使得最终购买目标产品的用户最多（即病毒式营销的传播范围最广）
 - 抽象后的优化问题为 NP 难，目标函数的计算为 #P 难
 - 设计了一个可按需在近似比与执行效率间进行权衡的近似算法
- Performance '15 **多实体竞争传播模型下基于有限信息的影响力最大化算法框架**
- 研究在已知竞争对手部分营销策略的情况下，为了吸引更多的目标群体，公司应如何寻找“种子用户”进行病毒式营销
 - 抽象后的优化问题为 NP 难，目标函数的计算为 #P 难
 - 设计了高效的近似算法框架，该框架 (1) 适用于一系列已提出的多实体竞争传播模型；(2) 可按需在近似比与执行效率间进行权衡
- ASONAM '15 **大规模动态网络中最短距离查询的 I/O 高效算法**
- 利用 2-Hop 索引 (2-Hop Labeling 或 2-Hop Index) 实现大规模图上的点对点距离查询
 - 研究当网络动态增长时，如何快速且准确地返回对任意点对间最短距离的查询结果
 - 设计并实现了 I/O 高效的算法框架：给定初始网络的 2-Hop 索引，该框架 (1) 可在网络动态变化时快速更新索引；(2) 即使更新尚未完成，亦可高效地查询任意点对间的最短距离
- SITIS '13 **复杂网络下信息与疾病传播的建模与分析**
- 扩展经典的 SIS 模型 (Susceptible-Infected-Susceptible Model) 为一个一般化的 SIS 模型
 - S (susceptible): 如传染病模型中的“健康”或病毒式营销中的“未购买”
 - I (infected): 如传染病模型中的“感染”或病毒式营销中的“已购买”
 - 理论分析了在一般化 SIS 模型中实体（如信息或病毒）可大规模传播的必要条件，并通过仿真实验对理论结果进行验证

论文

会议论文

- [1] **Yishi Lin**, Wei Chen, and John C.S. Lui. Boosting information spread: An algorithmic approach. *Accepted for publication in IEEE International Conference on Data Engineering (ICDE)*, 2017.
- [2] **Yishi Lin** and John C.S. Lui. Analyzing competitive influence maximization problems with partial information: An approximation algorithmic framework. *Performance Evaluation (also accepted in the IFIP W.G. 7.3. Performance Conference, 2015)*, 2015.
- [3] **Yishi Lin**, Xiaowei Chen, and John C.S. Lui. I/O efficient algorithms for exact distance queries on disk-resident dynamic graphs. In *Proceedings of the 2015 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, 2015.
- [4] Silei Xu, **Yishi Lin**, Hong Xie, and John C.S. Lui. A provable algorithmic approach to product selection problems for market entry and sustainability. In *Proceedings of the 26th International Conference on Scientific and Statistical Database Management (SSDBM)*. ACM, 2014.
- [5] **Yishi Lin**, John C.S. Lui, Kyomin Jung, and Sungsu Lim. Modeling multi-state diffusion process in complex networks: Theory and applications. In *Proceedings of the 2013 International Conference on Signal-Image Technology & Internet-Based Systems (SITIS)*, 2013.

期刊论文

- [6] **Yishi Lin**, John C.S. Lui, Kyomin Jung, and Sungsu Lim. Modelling multi-state diffusion process in complex networks: theory and applications. *Journal of Complex Networks*, 2014.

在投论文

- [7] Byeongjin Choe, **Yishi Lin**, Sungsu Lim, John C.S. Lui, and Kyomin Jung. Efficient approximation of opinion spreading in general social networks.

荣誉及获奖情况

奖学金

- 2015 微软学者奖学金提名奖
- 2013–2017 香港政府博士研究生奖学金 (Hong Kong PhD Fellowship Scheme)
- 2012 中国科学技术大学第 32 届郭沫若奖学金
- 2012 Google 中国 Anita Borg 计算机学科女性奖学金
- 2011 国家奖学金

ACM/ICPC

- 2011 Google 杯 ACM/ICPC 上海复旦邀请赛, 金牌
- 2011 ACM/ICPC 国际大学生程序设计竞赛亚洲预选赛大连赛区, 银牌
- 2010 ACM/ICPC 国际大学生程序设计竞赛亚洲预选赛天津赛区, 银牌
- 2010 ACM/ICPC 国际大学生程序设计竞赛亚洲预选赛杭州赛区, 铜牌

其他

- 2015 Student Travel Grants for IFIP Performance 2015

技能

- 专业 熟练掌握 C/C++, 了解 R, MatLab 及 Python
- 英语水平 较好的英文口语、阅读、写作能力, 托福 106 分 (总分 120)

Yishi Lin

Ph.D. in Computer Science and Engineering

+86 18676701407
✉ yishilin14@gmail.com
📁 dango.rocks

Education

- 2013–2017 **Ph.D., Computer Science and Engineering**, *The Chinese University of Hong Kong*.
Thesis: Information Diffusion and Distance Query in Large-Scale Networks
Research interests: information diffusion, influence maximization, complex networks, graph algorithms
Advisor: Prof. John C.S. Lui
- 2009–2013 **B.E., Computer Science and Technology**, *University of Science and Technology of China*.
GPA: 4.01/4.30, Rank: 1/106

Experience

- 2017–present **Researcher**, *WXG, Tencent*.
- 2015 **Research Intern**, *Theory Group, Microsoft Research Asia*.
Research on boosting influence spread in social networks, mentored by Wei Chen
- 2013–2016 **Teaching Assistant**, *The Chinese University of Hong Kong*.
Teaching assistant for undergraduate/postgraduate courses titled “Fundamental of Machine Learning”, “Introduction to Network Science”, “Engineering Mathematics III”, “Problem Solving By Programming”
Designed and graded assignments, held weekly tutorials, laboratory sessions, and office hours

Selected Research Projects

- ICDE '17 **Boosting Information Spread: An Algorithmic Approach**
- Studied how to offer incentives to customers so to boost the information spread of “initial adopters” and success in viral marketing campaigns
 - Proposed approximation algorithms with the data-dependent approximation guarantee
 - Provided theoretical analysis and extensive performance evaluation
- Performance '15 **Analyzing Competitive Influence Maximization Problems with Partial Information**
- Studied how to target influential customers as “initial adopters” so to success in competitive viral marketing campaigns
 - Proposed a general approximation algorithm that works for all specific instances of the general “Competitive Influence Maximization with Partial information” problem
 - Provided theoretical analysis and extensive experimental evaluation
- ASONAM '15 **I/O Efficient Algorithms for Exact Distance Queries on Disk-Resident Dynamic Graphs**
- Studied how to answer shortest distance queries on disk-resident dynamic graphs
 - Designed an I/O efficient framework that is able to (1) construct and maintain an 2-hop distance index of a dynamic graph, and (2) answer distance queries efficiently
 - Presented how to answer distance queries on the latest snapshot of the dynamic network based on outdated index and a set of new edges
 - Provided theoretical analysis and extensive experimental evaluation
- SITIS '13 **Modeling Multi-state Diffusion Process in Complex Networks**
- Proposed a “generalized Susceptible-Infected-Susceptible (SIS) model”
 - Determined which initial condition leads to or prevents the outbreak of information or virus using the mean-field analysis technique
 - Provided theoretical analysis and simulation results

Publications

Conference

- [1] **Yishi Lin**, Wei Chen, and John C.S. Lui. Boosting information spread: An algorithmic approach. *Accepted for publication in IEEE International Conference on Data Engineering (ICDE)*, 2017.

- [2] **Yishi Lin** and John C.S. Lui. Analyzing competitive influence maximization problems with partial information: An approximation algorithmic framework. *Performance Evaluation (also accepted in the IFIP W.G. 7.3. Performance Conference, 2015)*, 2015.
- [3] **Yishi Lin**, Xiaowei Chen, and John C.S. Lui. I/O efficient algorithms for exact distance queries on disk-resident dynamic graphs. In *Proceedings of the 2015 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)*, 2015.
- [4] Silei Xu, **Yishi Lin**, Hong Xie, and John C.S. Lui. A provable algorithmic approach to product selection problems for market entry and sustainability. In *Proceedings of the 26th International Conference on Scientific and Statistical Database Management (SSDBM)*. ACM, 2014.
- [5] **Yishi Lin**, John C.S. Lui, Kyomin Jung, and Sungsu Lim. Modeling multi-state diffusion process in complex networks: Theory and applications. In *Proceedings of the 2013 International Conference on Signal-Image Technology & Internet-Based Systems (SITIS)*, 2013.

Journal

- [6] **Yishi Lin**, John C.S. Lui, Kyomin Jung, and Sungsu Lim. Modelling multi-state diffusion process in complex networks: theory and applications. *Journal of Complex Networks*, 2014.

Manuscript

- [7] Byeongjin Choe, **Yishi Lin**, Sungsu Lim, John C.S. Lui, and Kyomin Jung. Efficient approximation of opinion spreading in general social networks.

Honors & Awards

- Scholarships
 - Nomination Award of the Microsoft Research Asia Fellowship (13 Fellowship winners, and 16 Nomination Award winners), 2015
 - Hong Kong PhD Fellowship, 2013–2017
 - Guo Moruo Scholarship of USTC (the highest honor for undergraduates in USTC), 2012
 - Google China Anita Borg Scholarship, 2012
 - National Scholarship of China, 2011
- ACM-ICPC
 - Gold Medal, Google Cup ACM-ICPC China Shanghai Fudan Invitational Programming Contest, 2011
 - Silver Medal, The ACM-ICPC Asia Regional Contest, Dalian Site, 2011
 - Silver Medal, The ACM-ICPC Asia Regional Contest, Tianjin Site, 2010
 - Bronze Medal, The ACM-ICPC Asia Regional Contest, Hangzhou Site, 2010
- Others
 - Student Travel Grants for IFIP Performance 2015

Skills

- Languages
 - Use C/C++ in most projects, familiar with R, Python and MatLab
- Others
 - Native in Chinese, professional working proficiency in English