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研究领域 大数据, 复杂网络, 统计抽样, 社会网络, 流行病学, 手机数据, 人类行为动力学, 应急管理, 灾害救援

现工作单位

2018/12 - 至今, 国防科技大学, 系统工程学院, 教授

2012/9- 至今, 国际非营利组织 Flowminder 基金会, 创建人, 首席分析师

教育工作经历

2014/12 - 2018/12, 国防科技大学, 系统工程学院（原信息系统与管理学院）, 副教授

2013/07 - 2014/12, 国防科技大学, 信息系统与管理学院, 讲师

2013/03 - 2013/05, 斯德哥尔摩未来学院, 研究员

2009/01 - 2013/02, 斯德哥尔摩大学社会学系, 助理研究员, 40%工作时间

2010/01 - 2013/02, 卡罗林斯卡学院公共卫生系, 助理研究员, 20%工作时间

2009/01 - 2013/02, 瑞典卡罗林斯卡学院, 公共卫生管理, 博士, 导师: Fredrik Liljeros

2006/09 - 2008/12, 国防科学技术大学, 管理科学与工程, 硕博连读, 导师: 谭跃进

2002/09 - 2006/06, 四川大学, 管理科学, 学士, 导师: 贺昌政

代表著作

Lu X*, et al., *Mobile Phone-Based Population Flow Data for the COVID-19 Outbreak in Mainland China*. **Health Data Science**, 2021. 2021: p. 9796431.

Jia J#, Lu X#, et al. *Population flow drives spatio-temporal distribution of COVID-19 in China*. **Nature**, 2020. 582(7812): p. 389-394.

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Buckee C O, Tatem A, Wetter E, Lu X, and Bengtsson L. *Society: Protect Privacy of Mobile Data*. **Nature**, 514, 7520 (2014): 35-35. (correspondence)

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Bengtsson L, **Lu X**, et al. *Improved Response to Disasters and Outbreaks: Tracking Population Movements with Mobile Phone Network Data in Haiti*. **PLOS Medicine**, 2011; 8 (8): e1001083

学术论文 (英/中)

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公开研究报告

With Bengtsson L, Richard Garfield, Anna Thorson, Johan von Schreeb. “Internal population displacement in Haiti: preliminary analyses of movement patterns of Digicel mobile phones: 1 January to 11 March 2010.” **Karolinska Institute, Columbia University**, 2010. <http://reliefweb.int/report/haiti/internal-population-displacement-haiti-preliminary-analyses-movement-patterns-digicel>

With Bengtsson L, Richard Garfield, Anna Thorson, Johan von Schreeb. “Internal Population displacement in Haiti - Preliminary analyses of movement patterns of Digicel mobile phones: 1 December 2009 to 18 June 2010.” **Karolinska Institute, Columbia University**, 2010. <http://reliefweb.int/report/haiti/internal-population-displacement-haiti-preliminary-analyses-movement-patterns-digicel-0>

With Bengtsson L, Richard Garfield, Anna Thorson, Johan von Schreeb. “Saint-Marc Cholera Outbreak: Analyses of ongoing population movements from the Saint-Marc area, Haiti.” **Karolinska Institute, Columbia University**, 2010. <http://reliefweb.int/report/haiti/saint-marc-cholera-outbreak-analyses-ongoing-population-movements-saint-marc-area-haiti>

With Bengtsson L, Richard Garfield, Anna Thorson, Johan von Schreeb. “Preliminary analyses of movement patterns of Digicel mobile phones: 1 December 2009 to 19 December 2010.” **Karolinska Institute, Columbia University**, 2011. <http://reliefweb.int/report/haiti/internal-population-displacement-haiti-preliminary-analyses-movement-patterns-digicel-1>

With Flowminder and WorldPop, “Population distributions and mobility patterns in West Africa for supporting efforts in controlling ebola virus outbreak“ by **WorldPop** 2014. <http://www.worldpop.org.uk/ebola/>

With Flowminder, “Mobile phone data and disaster response – Bangladesh“, in “World humanitarian: data and trends 2014“ by **UNOCHA** 2015. http://interactive.unocha.org/publication/2014_datatrends/

With Flowminder, “Nepal Floods July 2016 Population Mobility, Displacement and Impacted Areas Based on Analyses of Anonymized Mobile Network Data“ by **Flowminder** 2016. <http://reliefweb.int/report/nepal/nepal-floods-july-2016-population-mobility-displacement-and-impacted-areas-based>

With David Wrathall, “Using mobile network data to understand climate change and migration“, **UK Climate & Migration Coalition (UKCMC)** 2017. <http://climatemigration.org.uk/mobile-network-data-provide-new-insights-on-climate-change-and-migration/>

学术活动

1. 2021.04.18, 特邀报告, 珠海, 大数据背景下的人类行为动力学研究, 第三届体系工程学术会议
2. 2021.03.26, 特邀报告, 洛阳, Higher-order Dependencies in Complex Systems, 社会计算与社会智能交叉学科战略研讨会
3. 2020.12.13, 特邀报告, 成都, 网络科学在疫情防控中的前沿应用, 第十五届管理学年会会议
4. 2020.11.30, 特邀报告, 成都, 面向公共突发事件的异常监测系统及算法, 重大突发公共卫生事件下应急医疗资源配置高峰论坛
5. 2020.11.22, 特邀报告, 济南, 新冠疫情下的公共卫生风险管理, 第一届中国(双法)风险管理分会学术年会
6. 2020.11.14, 特邀报告, 珠海, 灾害事件对社会系统的影响: 基于网络空间演化的自然实验研究, 2020年自然科学交叉学科前沿论坛
7. 2020.11.02, 特邀报告, 北京, 基于人口流动大数据的新型冠状病毒输出感染风险及接触网络传播模型研究, 双清论坛

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8. 2020.10.19, 特邀报告, 北京, 从桌面推演到大数据建模, 双清论坛
 9. 2020.10.18, 特邀报告, 山西, 大数据在应急管理中的前沿应用, 管理科学与工程学会年会
 10. 2020.10.17, 特邀报告, 成都, 大数据与复杂网络在疫情防控中的前沿应用, 第六届生物学大数据智能技术应用峰会
 11. 2020.09.05, 特邀报告, 上海, 大数据技术在应急管理中的前沿应用, 新浪微热点第二届大数据论坛
 12. 2020.08.21, 特邀报告, 西宁, 络科学在新冠肺炎疫情防控中的应用, 2020 年全国复杂性科学年会
 13. 2019.09.02, 特邀报告, 泰国曼谷, Expert meeting on Statistics on Gender and the Environment, 联合国专家会议 (通过 Skype 作视频会议报告)
 14. 2019.08.16, 特邀报告, 深圳, 应急管理中的移动大数据与互联网大数据挖掘, 第八届全国社会媒体处理大会
 15. 2019.05.18, 特邀报告, 长沙, 大数据与社会系统建模: 应对贫穷、疾病、灾害的数据模型, 第三届中国系统科学大会
 16. 2018.11.30, 特邀报告, 福州, 网络可追溯性: 供应链产品追溯能力的统一度量指标, 第二十届中国管理科学学术年会
 17. 2018.11.29, 特邀报告, 昆明, 基于网络社区大数据的高危人群特征挖掘及统计推断研究, 第十五届全国药物依赖性学术会议暨国际精神疾病研讨会
 18. 2018.11.16, 特邀报告, 西安, Modeling the re-exposure rate of information spreading, 社交媒体空间用户画像与智能推荐前沿论坛
 19. 2018.11.02, 特邀报告, 北京, 移动大数据、互联网大数据与应急管理前沿应用, 第十三届国际应急管理论坛暨中国(双法)应急管理专业委员会第十四届年会
 20. 2018.10.19, 特邀报告, 昆明, 大数据与公益应用: 应对贫穷、疾病、灾害的数据模型, 管理科学与工程学会 2018 年年会
 21. 2018.10.12, 特邀报告, 重庆, 大数据与公益应用: 应对贫穷、疾病、灾害的数据模型, 第十四届全国复杂网络学术会议 (CCCN 2018)
 22. 2018.08.03, 特邀报告, 大连, 大数据、复杂网络与管理决策, 第十届中国决策科学学术年会
 23. 2018.07.26, 特邀报告, 成都, 移动数据、网络数据与公共卫生, 第四届生物学大数据·智能技术应用国际论坛
 24. 2018.07.23, 特邀报告, 哈尔滨, 大数据、复杂网络与人类行为, NSFC-RGC 青年学者论坛“数字经济时代下的市场营销”
 25. 2018.06.07, 特邀报告, 长沙, 移动大数据、互联网大数据与难接触人群研究, 第一届大数据、复杂网络与人类行为前沿交叉论坛
 26. 2018.02.06, 特邀报告, 北京, The Use of Anonymous Mobile Operator Data in Migration Emergencies, IOM (International Organization for Migration) Seminar on Global Approach to Mixed Migration: Migrants in Crisis Situations
 27. International Conference on Data-driven Smart/Green Manufacturing, 特邀报告, 合肥, 2017
 28. 中国大数据应用大会·首届西部金融大数据应用论坛, 大会报告, 成都, 2017
 29. 国家自然科学基金委管理科学部“宏观管理与政策学科 2016 年度青年基金获得者检查交流会”, 大会报告, 长沙, 2017
 30. Workshop on Data-driven Research in Operations Innovation, 大会报告, 上海, 2017
 31. China-Canada International Conference on Disease Modelling, 大会报告, 上海, 2017
 32. 中国科协第 336 次青年科学家论坛, 大会报告, 北京, 2017
 33. 大数据环境下体系工程与智能决策研讨会, 大会报告, 成都, 2017
 34. 网络科学青年论坛, 大会报告, 合肥, 2017
 35. 第十八届中国管理科学学术年会, 大会报告, 西安, 2016
 36. 系统科学学术研讨会, 大会报告, 烟台, 2016
 37. 大数据分析复杂社会系统建模学术会议, 大会报告, 国防科学技术大学, 长沙, 2016

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38. IEEE International Conference on Data Science in Cyberspace (IEEE DSC 2016), 特邀报告, Changsha, 2016
 39. 国家自然科学基金委重大研究计划“大数据驱动的管理与决策研究”会评专家, 北京, 2015
 40. 国家自然科学基金委员会管理科学部“宏观管理与政策学科公共管理领域 2014 年度青年基金获得者检查交流会”, 大会报告, 上海, 2015。
 41. 华人学者管理科学与工程协会国际年会(CSAMSE 2015), 大会报告, 沈阳, 2015
 42. NetSCI-X2015 (全球复杂网络大会), 专题报告, 里约热内卢, 2015
 43. 综合集成与复杂系统国际研讨会, 大会报告, 北京, 2014
 44. 中国系统工程学会第 18 届学术年会, 特邀报告, 合肥, 2014
 45. 全国复杂网络学术会议, 专题报告, 长沙, 2014
 46. 明道大会, 大会报告, 上海, 2014
 47. TCL 集团技术创新大会, 大会报告, 惠州, 2014
 48. 中国计算机学会第一届大数据学术会议, 大会报告, 北京, 2013
 49. 第 9 届全国复杂网络大会 (CCCN13), 杭州, 2013
 50. 圣塔菲研究所复杂系统暑期学校, 圣塔菲, 美国新墨西哥州, 2012
 51. SGIP12 (Stockholm Gang Intervention and Prevention Project), 特邀报告, 斯德哥尔摩, 瑞典, 2012
 52. Workshop: Network modeling - Methods and applications in biology, medicine and sociology, 奥斯陆, 挪威, 2012
 53. NetMob2011 (世界移动数据会议), 特邀报告, 波士顿, 美国, 2011
 54. Respondent-driven Sampling 研究论坛, 组织及主持, 斯德哥尔摩, 瑞典, 2011
 55. 3rd International Conference of Crisis Mappers (ICCM 2011), 日内瓦, 瑞士, 2011
 56. Conference on Applications of Network Theory, 斯德哥尔摩, 瑞典, 2011
 57. International School on Multidisciplinary Approaches to Economic and Social Complex Systems, 锡耶纳, 意大利, 2010
 58. DPG 2010, Deutsche Physikalische Gesellschaft, 雷根斯堡, 德国, 2010
 59. NetSCI 09 (全球复杂网络大会), 威尼斯, 意大利, 2009

学术、社会兼职

1. 国际非营利组织 Flowminder 基金会创建人, 理事会成员, 首席分析师(2012-)
2. 中国管理现代化研究会常务理事(2020-)
3. 中国管理科学与工程学会副秘书长(2018-)
4. 《Health Data Science》编委(Science partner journal, 2020-2023)
5. 《Fundamental Research》编委(2020-)
6. 《Infectious Diseases and Translational Medicine》编委(2016-)

获奖情况

1. 吕欣(2/15); 大数据挖掘与应急管理计算实验, 中国仿真学会自然科学二等奖, 2020(陈彬*; 吕欣; 戴伟辉; 徐珂; 杨妹; 马亮; 何华; 骆祥峰; 谭索怡; 欧朝敏; 艾川; 朱正球; 陈超; 王一多; 陈斐然).
2. 吕欣(6/9); 依托管理科学与工程优势学科, 培养××管理高素质人才的创新与实践, 军队教学成果一等奖, 2020(谭跃进*; 郭波; 杨克巍; 李孟军; 赵青松; 吕欣; 姜江; 程志君; 葛冰峰)
3. ChinaVis2020 数据可视分析挑战赛, 中国图像图形学学会, 优胜奖, 其他, 2020(谭索怡; 陈洒然; 秦烁; 赛斌; 曹自强; 吕欣*).
4. 吕欣(5/5); 理工管军结合的管理科学与工程专业研究生培养创新与实践, 湖南省人民政府, 湖南省高等教育教学成果特等奖, 省部一等奖, 2019(谭跃进*; 郭波; 陈英武; 杨克巍; 吕欣).
5. 吕欣(5/12); 网络体系建模、仿真与设计技术及其应用, 教育部科技进步二等奖, 2019(谭跃进*; 刘忠; 杨克巍; 吴俊; 吕欣; 朱一凡; 赵青松; 雷永林; 黄魁华; 葛冰峰; 豆亚杰; 杨志伟).

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6. 吕欣(6/10); 复杂系统与体系工程导师团队, 湖南学位与研究生教育学会, 湖南省优秀研究生导师团队, 其他, 2019(谭跃进*; 杨克巍; 郭波; 李孟军; 赵青松; 吕欣; 姜江; 葛冰峰; 豆亚杰; 杨志伟).
 7. 吕欣(5/14); 面向应急管理的人工社会计算实验理论与方法, 中国仿真学会自然科学一等奖, 2018(邱晓刚*; 陈彬; 曹志冬; 段伟; 吕欣; 何凌南; 段红; 梅珊; 鞠儒生; 张烙兵; 刘亮; 马亮; 李祯; 艾川).
 8. Flowminder-X Lu 吕欣, L Bengtsson, E Wetter et. al*(1/3); Mobile in Emergency or Humanitarian Situations - Flowminder, Ncell and TeliaSonera for Aid the displaced post Nepal earthquake 基于移动大数据的尼泊尔地震快速应急响应, 全球移动通信系统协会(GSMA), 世界移动大会最佳应用奖 (GLOMO Award 2016), 国际学术奖, 2016(Flowminder-X Lu 吕欣, L Bengtsson, E Wetter et. al*; Ncell; TeliaSonera).
 9. 吕欣*(1/1); 基于移动数据的西非埃博拉地区人口预测及风险评价, 中国工业与应用数学学会, 全国复杂网络可视化大赛一等奖, 其他, 2014(吕欣*).
 10. Lu, Xin#*(1/2); 10 Breakthrough Technologies: Big Data from Cheap Phones, MIT Technology Review, 全球十大突破性技术, 国际学术奖, 2013(Lu, Xin#*; Bengtsson, Linus#*).
 11. Flowminder-X Lu 吕欣, L Bengtsson, E Wetter*(1/1); Flowminder.org for Rapid Population Movement Analysis Using Cell Phone Data for Improving Efficiency of Humanitarian Relief 应用手机数据进行快速人口流动分析, 以提高人道主义救援效率, 全球移动通信系统协会(GSMA), 世界移动大会最佳应用奖提名, 国际学术奖, 2013(Flowminder-X Lu 吕欣, L Bengtsson, E Wetter*).
 12. 吕欣(9/10); 网络系统可靠性、抗毁性分析与评价技术, 中国人民解放军总装备部, 科技进步, 省部二等奖, 2012(谭跃进*; 邓宏钟; 吴俊; 武小悦; 罗强; 刘琦; 张涛; 王卫威; 吕欣; 李勇).

技能情况 C, C#, 数据库系统, Matlab, ArcGIS; 大数据分析处理 (百万至十亿级数据); 中英文.

科研项目

1. 国家杰出青年科学基金, 72025405, 大数据技术的公益应用: 应对贫穷、疾病、灾害的数据模型, 2021/01-2025/12, 280 万元, 在研, 主持
2. 国家自然科学基金委员会, “新型冠状病毒 (2019-nCoV) 溯源、致病及防治的基础研究” 专项项目, 82041020, 基于人口流动大数据的新型冠状病毒 (2019-nCoV) 输出感染风险及接触网络传播模型研究, 2020-03 至 2022-03, 135 万元, 在研, 主持
3. 四川省科学技术厅, 基于人群动态定位大数据平台、多种时空网络、动力学模型对新型冠状病毒肺炎传播及流行趋势的评估与预测, 2020YFS0007, 2020-02 至 2021-01, 100 万元, 在研, 四川大学、电子科技大学、国防科技大学
4. XXX 创新特区项目, XXX, 基于 XXX 的智能挖掘与利用技术研究, 2020/06-2021/12, 150 万元, 在研, 主持
5. 国家自然科学基金面上项目, 71771213, 基于在线网络社区的难接触人群特征挖掘及抽样关键技术研究, 2018/1-2021/12, 49 万元, 在研, 主持
6. 湖南省重点研发计划, 2019GK2131, 面向新一代人工智能的大数据智能分析技术与平台及应用示范, 2019/10-2021/9, 690 万元(专项 150+自筹 540), 在研, 湖南工商大学、中南大学、湖南红普创新科技发展有限公司、中国人民解放军国防科技大学
7. 湖南省杰出青年基金, 2018JJ1034, 基于大数据挖掘的人类行为动力学研究及其在应急管理中的应用, 2018/01-2020/12, 30 万元, 已完成, 主持
8. 湖湘青年英才支持计划, 2017RS3040, 2017/6-2020/5, 50 万元, 已完成, 主持
9. 国家自然科学基金重大项目, 71690233, 互联网与大数据环境下高端装备制造创新研制任务集成管理, 2017/1-2021/12, 315 万元, 在研, 子课题负责人
10. 国家自然科学基金优秀青年科学基金, 71522014, 大数据挖掘与应急管理, 2016/1-2018/12, 150 万元, 已完成, 主持

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11. 瑞典研究理事会基金, 99546, Using mobile phone data from 25 million subscribers in four low- and middle-income countries to support elimination child deaths, malnutrition and poverty, 2014/01-2016/12, 474.6 万瑞典克朗, 已完成, 共同申请人(co-applicant)
 12. 国家自然科学基金青年项目, 71301165, 基于移动通信与在线社交媒体数据的大规模突发事件下人类行为动力学研究, 2014/1-2016/12, 23 万元, 已完成, 主持
 13. 国防科技大学青年拔尖人才计划, 2014/9-2017/9, 30 万元, 已完成, 主持
 14. 国防科技大学预研项目, 移动大数据与应急管理: 时空模型与通信, 2014/9-2016/9, 15 万元, 已完成, 主持
 15. XXX 预研项目, XXX, 基于在线社会网络的 XXX 研究, 2013/10-2015/10, 16 万元, 已完成, 主持
 16. 欧盟第七框架项目, 241900, ISSC: An integrated surveillance system for infectious disease in rural China, 2010/3-2013/2, 300 万欧元, 已完成, 参加

讲授课程 (部分)

研究生课程《大数据分析》

Big Data Analytics (32hrs, master and phd students)

(This course teaches cutting-edge technical methods, tools and applications for big data analysis. Based on the introduction of database principles and classical statistical analysis and machine learning, the course is divided into four parts to describe the most widely used types of large-scale data analysis techniques:

1) Large-scale text data analysis methods and cutting-edge applications. 2) Large-scale network data analysis methods and cutting-edge applications. 3) Large-scale spatial data analysis methods and cutting-edge applications. 4) Abnormal monitoring models, algorithms and cutting-edge applications.

Software use: Python 3.X, Gephi, ArcGIS)

研究生课程《复杂系统理论与方法》

Complex Systems: Theory and Applications (36hrs, master and phd students)

(Covering a range of complexity theory, including adaptive systems, generic algorithm, complex networks etc.

Software use: Gephi)

研究生课程《应用多元统计分析》

Applied Multivariate Statistical Analysis (60hrs master and phd students)

(Basic algebra and probability theory, statistic Concepts, correlation, hypothesis testing, linear and non-linear regression, GLM, factor analysis, clustering, spatial data analysis, anomaly detection etc. Software use: SPSS, Matlab, Gephi, ArcGIS)

高干培训课程《应急管理理论与方法》

Emergency Management (8hrs, training course for officials)

(The theory of emergency management, prevention, mitigation, preparedness, response and recovery, psychological basics on emergency situations, advances in disaster response)

高干培训课程《数据分析基础》

Data Analytic Basics (8 hrs, training course for officials)

(Statistic concepts, descriptive statistics, correlation, hypothesis testing, regression and prediction, data visualization. Software use: Matlab)

MPA 课程《管理统计学》

Managerial Statistics (36 hrs, mpa)

(Statistic concepts, descriptive statistics, correlation, hypothesis testing, regression, factor analysis and case studies.
Software use: SPSS)

本科生课程《统计软件及其应用》

Statistic Practice with SPSS (18 hrs, mpa)

(Data preparation, visualization, descriptive statistics, correlation, hypothesis testing, regression, factor analysis.
Software use: SPSS)