

徐科

✉ lukexuke@gmail.com

☎ (+86) 15921092715

教育背景

Sept 2015 **Ph.D. in Electronic and Computer Engineering**

- Aug 2019 香港科技大学, 香港特别行政区, 中国

- 导师: 屈华民教授
- 博士论文: Visual Anomaly Detection and Its Applications.

Sept 2011 **B.S. in Electronic Science and Technology**

- Jul 2015 南京大学, 南京, 中国

- 排名: 1/217.
- 论文: FPGA-based Design of FFT & FIR.

研究兴趣

Data Intelligence (数据智能), Business Intelligence(BI, 商业智能), LLM+AI+BI, Visual Analytics (可视分析), Big Data (大数据), Anomaly Detection (异常检测), Explainable AI (可解释 AI), Time-series Analytics (时序分析)

研究 / 工作经历

Jan 2021 **华为云**, 杭州, 中国

- Present 可视分析能力中心负责人, 助理首席数据科学家, 数据智能创新 Lab

- 天才少年计划获得者
- 主导孵化华为第一个智能数据洞察(BI)云服务 **DataArts Insight**, 并联合盘古大模型在工商银行、滴滴等公司进行项目验证, 提升数据分析效率 10+倍, 预计 2024 年销售 1 亿。
- 主导创建华为云第一个组件库品牌 **Achart**, 半年下载量 **4000+**次。
- 领导构建华为云数据智能领域对话机器人等 10+高阶分析能力, 落地 15+业务, 2 篇顶刊论文, 7 篇专利。

Jan 2020 **纽约大学**, 纽约, 美国

- Sept 2020 博士后 (advised by Prof. Claudio Silva & Prof. Enrico Bertini), VIDA Lab

- 主导一项用可视化**解释机器学习**模型的调研工作, 与 Capital One 合作。
- 主导开发了 mTSeer, 一个用于**评估多维时序数列预测模型**(金融、新闻数据等)的交互式、可操作的可视分析系统。
- 作为主要开发者与 Capital One 合作一项为机器学习产生**合成数据**的项目。

- May 2019 **哈佛大学**, 波士顿, 美国
- Aug 2019 访问学者 (advised by Prof. Hanspeter Pfister), Visual Computing Group
- 设计和搭建了一项生物医学项目的部分可视化系统来提高辅助生殖技术中的受精卵选择, 与哈佛医学院合作。
- Jan 2019 **微软亚洲研究院**, 北京, 中国
- May 2019 研究实习生 (advised Dr. Yun Wang), Software Analytics Group
- 主导开发了 CloudDet, 一个用于交互式分析云计算平台中的异常行为的可视化系统。
 - 合作设计了 Datashot, 一个可以从表格数据自动生成海报的可视化系统。
- Feb 2017 **同济大学**, 上海, 中国
- Sept 2017 研究实习生 (advised Prof. Nan Cao), iDVx Lab
- 主导开发了 ECGLens, 一个用于从心电图检测心率失常的可视化辅助系统。
 - 设计开发了 EventThread, 一个用于总结 event sequence 数据演变的可视分析系统。
- Jun 2016 **香港科技大学**, 香港, 中国
- Dec 2019 博士生, HKUST VISLab
- 开发了可视分析系统 EnsembleLens, 基于 ensemble 方法来评估不同的异常检测算法。
 - 设计开发了一个可视分析系统, 帮助香港物流及供应链多元技术研发中心 (LSCM) 综合分析香港天气, 老人走失, 和固定资产管理等问题。
 - 作为主要贡献者负责一项香港研究基金申请 (Research Grant Council), 用于对时序数据的机器学习模型进行可解释性分析。
- Jun 2014 **麦吉尔大学**, 蒙特利尔, 加拿大
- Sept 2014 暑期实习生 (advised by Prof. Kirk H. Bevan), Department of Material Engineering
- 提供了一个模型来预测纳米生物传感器的筛选受限反应。
- Jun 2014 **南京大学**, 南京, 中国
- Sept 2014 项目领导者 (advised by Prof. Xinggan Zhang)
- 主导了一项国家级创新训练项目 -- Microphone Array Acoustic Localization and Speech Enhancement.

论文

[1 区+ A 级] Qiaomu Shen, Zhengxin You, Xiao Yan, Chaozu Zhang, **Ke Xu**, Jianbin Qin, Dan Zeng, Bo Tang.

QEVIS: Multi-grained Visualizing of Distributed Query Execution.

IEEE Transactions on Visualization and Computer Graphics (VAST'23: Proceedings of the IEEE Visual Analytics Science and Technology), IEEE, 2023. [24.68% acceptance rate]

[1 区+ A 级] Yang Shi, Bingchang Chen, Ying Chen, Zhuochen Jin, **Ke Xu**, Xiaohan Jiao, Tian Gao, Nan Cao.

Supporting Guided Exploratory Visual Analysis on Time Series Data with Reinforcement Learning.

IEEE Transactions on Visualization and Computer Graphics (VAST'23: Proceedings of the IEEE Visual Analytics Science and Technology), IEEE, 2023. [24.68% acceptance rate]

[1 区+A 级] Yifang Wang, Hongye Liang, Xinhuan Shu, Jiacheng Wang, **Ke Xu**, Zikun Deng, Cameron Campbell, Bijia Chen, Yingcai Wu, Huamin Qu.

Interactive Visual Exploration of Longitudinal Career Mobility Data.

IEEE Transactions on Visualization and Computer Graphics, doi: 10.1109/TVCG.2021.3067200, IEEE, 2022.

[A+ 级] **Ke Xu**, Jun Yuan, Yifang Wang, Claudio Silva, Enrico Bertini.

mTSeer: Interactive Visual Exploration of Models on Multivariate Time-series Forecast.

CHI'21: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems.

[A 级] Brian Barr, **Ke Xu**, Claudio Silva, Enrico Bertini, Robert Reilly, Jason Wittenbach.

Towards Ground Truth Explainability on Tabular Data.

ICML 2020 (WHI).

[1 区+ A 级] **Ke Xu**, Yun Wang, Leni Yang, Yifang Wang, Bo Qiao, Qin Si, Yong Xu, Haidong Zhang, Huamin Qu.

CloudDet: Interactive Visual Analysis of Anomalous Performances in Cloud Computing Systems.

IEEE Transactions on Visualization and Computer Graphics (VAST'19: Proceedings of the IEEE Visual Analytics Science and Technology), doi: 10.1109/TVCG.2019.2934, IEEE, 2019. [24.7% acceptance rate]

[1 区+ A 级] Yun Wang, Zhida Sun, Haidong Zhang, Weiwei Cui, **Ke Xu**, Xiaojuan Ma, Dongmei Zhang.

DataShot: Automatic Generation of Fact Sheet from Tabular Data.

IEEE Transactions on Visualization and Computer Graphics (InfoVis'19: Proceedings of the IEEE Information Visualization), doi: 10.1109/TVCG.2019.2934398, IEEE, 2019. [25.8% acceptance rate]

[B 级] Xing Mu*, **Ke Xu***, Qing Chen, Fan Du, Yun Wang, Huamin Qu.

MOOCad: Visual Analysis of Anomalous Learning Activities in Massive Open Online Courses.

EuroVis'19: Proceedings of The Eurographics Conference on Visualization, pages: 91-95, doi: 10.2312/evs.20191176, EuroVis, 2019. [注：带*为通讯作者，下同]

[1 区+ A 级] **Ke Xu**, Meng Xia, Xing Mu, Yun Wang, Nan Cao.

EnsembleLens: Ensemble-based Visual Exploration of Anomaly Detection Algorithms with Multidimensional Data.

IEEE Transactions on Visualization and Computer Graphics (VAST'18: Proceedings of the IEEE Visual Analytics Science and Technology), doi: 10.1109/TVCG.2018.2864825, IEEE, 2018. [25.6% acceptance rate]

[A+ 级] **Ke Xu**, Shunan Guo, Nan Cao, David Gotz, Aiwen Xu, Huamin Qu, Zhenjie Yao, Yixin Chen.

ECGLens: Interactive Visual Exploration of Large Scale ECG Data for Arrhythmia Detection.

CHI'18: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, p. 663, doi: 10.1145/3173574.3174237, ACM, 2018. (***Best Paper Honorable Mention**). [top 5% of all submissions]

[1 区+ A 级] Shunan Guo, **Ke Xu**, Rongwen Zhao, David Gotz, Hongyuan Zha, Nan Cao.

EventThread: Visual Summarization and Stage Analysis of Event Sequence Data.

IEEE Transactions on Visualization and Computer Graphics (VAST'17: Proceedings of the IEEE Visual Analytics Science and Technology), doi: 10.1109/TVCG.2017.2745320, IEEE, 2017.

Xingbo Wang, Furui Cheng, Yong Wang, **Ke Xu***, Jiang Long, Hong Lu, Huamin Qu.

Interactive Data Analysis with Next-step Natural Language Query Recommendation.

IEEE Transactions on Visualization and Computer Graphics [under review], 2023

Wenchao Li, Zhuochen Jin, Jiang Zhang, Huamin QU, **Ke Xu**.*

Narrator: Leveraging Natural Language to Support the Authoring of Visual Network Story.

IEEE Transactions on Visualization and Computer Graphics [*under review*], 2023

专利

Ke Xu.

一种图表组件选择方法和数据可视化设备. Application No. CN116541456A, 2022.

Ke Xu, Nan Cao, Zhuochen Jin, Yang Shi, Bingchang Chen.

基于云服务的数据分析方法、装置和计算设备集群. Application No. CN202211650218.2, 2022.

Ke Xu, Kangzhan Wang, Chen Yang, Jiang Long, Hong Lu.

数据查询方法、装置、电子设备及计算机可读存储介质. Application No. CN202211523534.3, 2022.

Ke Xu, Datong Wei, Zhuochen Jin.

显示数据等方法、装置及存储介质. Application No. CN202311083420.6, 2023

Changhe Yang, **Ke Xu**.

见解数据生成等方法和装置. Application No. PCT/CN2023/109267, 2022

Zhuochen Jin, Yanda Li, **Ke Xu**, Jiang Long, Hong Lu.

一种图表构建方法及相关设备. Application No. CN202211446392.5, 2022

Changhe Yang, **Ke Xu**, Datong Wei, Jiannan Wang, Jiang Long.

一种数据方法及相关系统. Application No. CN202311075219.3, 2023

奖励与荣誉

2022 先锋奖, 华为杭州研究所

2022 红杉奖, 华为

2021 华为天才少年计, 华为

2019 海外交流奖学金, HKUST

2019 参会奖学金, IEEE VIS 2019

2018 最佳论文提名奖, ACM CHI Conference [A+]

获奖文章为 ACM CHI 2018 ECGLens. 所有投稿的 top 5% 获奖

2018 参会奖学金, IEEE VIS 2018, ACM SIGCHI 2018

2015 博士奖学金, HKUST

-2019 南京大学优秀毕业生

2014 红太阳奖学金一等奖

每年从整个南京大学选拔奖励 30 个学生

2014 Canadian Globalink Research Internship Award

- 2013 宝钢奖学金
奖励给 2 名南京大学二年级学生.
- 2012 国家奖学金
每名学生只能获奖一次
- 2010 江苏省化学奥林匹克竞赛一等奖

受邀演讲

- Aug 2023 华为云下一代商业智能能力解析
同济大学, 上海, 中国
- Jul 2022 DataArts Studio 典型场景应用预览
华为伙伴暨开发者大会, 杭州, 中国
- May 2022 Visualization Research at Huawei
香港科技大学, 香港, 中国
- May 2021 mTSeer: Interactive Visual Exploration of Models on Multivariate Time-series Forecast
ACM CHI 会议, 横滨, 日本
- Mar 2020 Visual Anomaly Detection and Its Applications with Temporal Data
纽约大学, 纽约, 美国
- Oct 2019 CloudDet: Interactive Visual Analysis of Anomalous Performances in Cloud Computing Systems
IEEE VIS 会议, 温哥华, 加拿大
- Oct 2018 EnsembleLens: Ensemble-based Visual Exploration of Anomaly Detection Algorithms with Multidimensional Data
IEEE VIS 会议, 柏林, 德国
- Apr 2018 ECGLens: Interactive Visual Exploration of Large-Scale ECG Data for Arrhythmia
ACM CHI 会议, 蒙特利尔, 加拿大

教学经历

- 2019 Teaching Assistance, **Visualization: Connections with Machine Learning**, New York University
- 2017 Teaching Assistance, **Digital Circuit**, HKUST
- 2016 Teaching Assistance, **Signals and Systems**, HKUST
- 2018

学术服务

- Program Committee of IEEE VIS 2020
- Reviewer of IEEE Transactions on Visualization and Computer Graphics (TVCG)
- Reviewer of IEEE VIS (VAST, InfoVis, and SciVis) Conference
- Reviewer of ACM Conference on Human Factors in Computing Systems (CHI)

Reviewer of The Visual Computer Journal (TVCJ), Springer

Reviewer of Computer Science Review (CSR), Elsevier

Volunteer of IEEE VIS (VAST, InfoVis, and SciVis) Conference