徐科

纽约大学

Tandon工学院，纽约

kexu@nyu.edu

(+1) 3472219941

 (+86) 13681912504

Education

Sept 2015

- Aug 2019

Sept 2011

- Jul 2015

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

香港科技大学，香港特别行政区， 中国

* 导师: [屈华民教授](http://huamin.org/)
* 博士论文: Visual Anomaly Detection and Its Applications.

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

南京大学，南京，中国

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

Research Interests

Visual Analytics, Anomaly Detection, Explainable AI, Time-series Analytics, Healthcare

Research / Work Experience

Jan 2020

- Present

May 2019

- Aug 2019

Jan 2019

- May 2019

Feb 2017

- Sept 2017

**纽约大学，** 纽约，美国

博士后 (advised by [Prof. Claudio Silva](https://vgc.poly.edu/~csilva/) & [Prof. Enrico Bertini](http://enrico.bertini.io/)), VIDA Lab

* Lead a survey project on the use of visualization for **interpreting machine learning model**.
* Developed mTSeer, a visual analytic system for interactive and steerable exploration, explanation, and evaluation of **multivariate time-series forecasting models**.

**哈佛大学，** 波士顿，美国

访问学者 (advised [by Prof. Hanspeter Pfister](https://vcg.seas.harvard.edu/people/hanspeter-pfister)), Visual Computing Group

* Designed and built the visualization part of a biomedical project for improving embryo

selection in Assisted Reproductive Technologies, collaborated with Harvard Medical School.

**微软亚洲研究院，** 北京，中国

研究实习生 (advised [Dr. Yun Wang](https://www.microsoft.com/en-us/research/people/wangyun/)), Software Analytics Group

* Developed **CloudDet**, an interactive system for visually analyzing anomalous

performances in large **cloud computing** system.

* Cooperated in designing **DataShot**, a visualization system for **automatically generate**

**the poster** with the sheet data.

**同济大学，**上海，中国

研究实习生 (advised [Prof. Nan Cao](https://nancao.org/)), iDVx Lab

* Designed **ECGLens**, a visualization tool for **arrhythmia detection** with large scale ECG data.
* Developed **EventThread**, a visual analytics system for **summarizing event sequence data.**

Jun 2016

- Dec 2019

Jun 2014

- Sept 2014

Jun 2014

- Sept 2014

**香港科技大学，** 香港特别行政区，中国

博士生, HKUST VIS Lab

* Designed **EnsembleLens**, a visual system to evaluate different anomaly detection algorithms based on **ensemble analysis**.
* Design and build a visualization project for analyzing Hong Kong weather, elderly wandering and asset management, collaborated with LSCM Hong Kong.

**麦吉尔大学，**蒙特利尔，加拿大

暑期实习生 (advised by [Prof. Kirk H. Bevan](https://www.mcgill.ca/materials/people-0/faculty/kirk-h-bevan)), Department of Material Engineering

* Provided a model to predict the screening-limited response of nanobiosensors.

**南京大学，** 南京，中国

项目领导者 (advised [by Prof. Xinggan Zhang](https://ese.nju.edu.cn/72/82/c22541a356994/page.htm))

* Lead “Microphone Array Acoustic Localization and Speech Enhancement”, which is a National Innovation Training Program.

Publications

[C6, J4] **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]*

[C5, J3] 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]*

[C4] 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.

[C3, J2] **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]*

[C2] **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]*

[C1, J1] 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.

*Submitted*

**Ke Xu,** Jun Yuan, Yifang Wang, Claudio Silva, Enrico Bertini.

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

VAST 2020

Yifang Wang, Hongye Liang, Jiacheng Wang, **Ke Xu,** Xinhuan Shu, Cameron Campbell, Bijia Chen, Yingcai Wu, Huamin Qu.

**CareerFlow: Interactive Visual Analytics System for Large-Scale Longitudinal Career Mobility Data.**

VAST 2020.

Honors and Awards

2019

2018

2015

2014

2013

2012

海外交流奖学金, HKUST

1,000 HKD per month for an overseas research.

最佳论文提名奖, ACM CHI Conference

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

南京大学优秀毕业生

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

宝钢奖学金

奖励给2名南京大学二年级学生.

国家奖学金

每名学生只能获奖一次

Invited Talks

Mar 2020

Oct 2019

Oct 2018

Apr 2018

Visual Anomaly Detection and Its Applications with Temporal Data

*New York University*, New York, U.S.

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

*IEEE VIS Conference*, Vancouver, Canada.

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

*IEEE VIS Conference*, Berlin, Germany.

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

*ACM CHI Conference,* Montreal, Canada.

Teaching Experience

2019

2017

2016

- 2018

助教, **Visualization: Connections with Machine Learning,** New York University

助教, **Signals and Systems,** HKUST

助教, **Digital Circuit,** HKUST

Services

2018

- 2020

2019

2019, 2020

2018, 2019

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

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

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New York University

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* Supervisor: [Prof. Huamin Qu](http://huamin.org/)
* Thesis: Visual Anomaly Detection and Its Applications.

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

Nanjing University, Nanjing, China

* Ranking: **1/217.**
* Thesis: FPGA-based Design of FFT & FIR.

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Research Associate (advised by [Prof. Claudio Silva](https://vgc.poly.edu/~csilva/) & [Prof. Enrico Bertini](http://enrico.bertini.io/)), VIDA Lab

* Lead a survey project on the use of visualization for **interpreting machine learning model**.
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Visiting Scholar (advised [by Prof. Hanspeter Pfister](https://vcg.seas.harvard.edu/people/hanspeter-pfister)), Visual Computing Group

* Designed and built the visualization part of a biomedical project for improving embryo

selection in Assisted Reproductive Technologies, collaborated with Harvard Medical School.

**Microsoft Research Asia,** Beijing, China

Research Intern (advised [Dr. Yun Wang](https://www.microsoft.com/en-us/research/people/wangyun/)), Software Analytics Group

* Developed **CloudDet**, an interactive system for visually analyzing anomalous

performances in large **cloud computing** system.

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**McGill University,** Montreal, Canada

Summer Intern (advised by [Prof. Kirk H. Bevan](https://www.mcgill.ca/materials/people-0/faculty/kirk-h-bevan)), Department of Material Engineering

* Provided a model to predict the screening-limited response of nanobiosensors.

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VAST 2020.

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2013

2012

Oversea Research Award, HKUST

1,000 HKD per month for an overseas research.

Best Paper Honorable Mention Award, ACM CHI Conference

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

Excellent Student of Nanjing University

First Prize of Red Sun Scholarship

Awarded to **30** students in Nanjing University (**10000+**) each year.

First Prize of Red Sun Scholarship

Awarded to **2 Sophomores** (3000+) in Nanjing University each year.

National Scholarship

Only awarded once to students with top **1%** academic performance each year.

Invited Talks

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Apr 2018

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*ACM CHI Conference,* Montreal, Canada.

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- 2018

2017

Teaching Assistance, **Visualization: Connections with Machine Learning,** New York University

Teaching Assistance**, Digital Circuit,** HKUST

Teaching Assistance, **Signals and Systems,** HKUST

Services

2018

- 2020

2019

2019, 2020

2018, 2019

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

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