

# Kan REN

## PERSONAL DATA

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ORGANIZATION: Apex Data & Knowledge Management Lab  
Shanghai Jiao Tong University

## RESEARCH INTERESTS

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Machine learning, big data mining, knowledge management and applied artificial general intelligence (AGI) including recommender systems, computational advertising and optimization for sequential decision making.

## EDUCATION

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TILL NOW	PH.D.	Ph.D. candidate in Apex Knowledge and Management Lab, <b>Shanghai Jiao Tong University</b> , Shanghai, China Advisor: Prof. <a href="#">Yong YU</a>
2011 - 2014	Minor	Intensive Training Program of Innovation and Entrepreneurship, honored by <b>Chu Kochen Honors College</b> at Zhejiang University.
2010 - 2014	B.S.	B. Eng. in <b>Zhejiang University</b> , Zhejiang, China GPA: 4.45/5.0   Ranking: 8/168   Major: Computer Science Thesis: "QA-based Evaluation of Coverage in Domains of DBpedia" Advisor: Prof. <a href="#">Mingli SONG</a>
JAN. 2012	F.E.S.	Exchange program to <b>University of California Davis</b> , U.S.A. hosted by Outstanding Students Program of Chu Kochen Honors College.

## WORKING EXPERIENCE

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AUG. 2018 - Jan. 2019	<b>Research Intern</b> of Machine Learning at <b>Alibaba Inc.</b> <i>Sequential User Modeling, User Response Prediction</i> <i>Alimama Online Advertising Group</i>
DEC. 2015 - Jan. 2016	<b>Research Intern</b> of Machine Learning at <b>YOYI Inc.</b> <i>User Modeling and Bidding Optimization</i> Propose the joint optimization model for user response prediction and implementation on the online platform for real-time bidding in display advertising.
SEP. 2015 - Jun. 2019	<b>Research Leader</b> of Data Mining Group <i>Apex Data and Knowledge Management Lab, Shanghai Jiao Tong University</i> <b>Supervisor</b> of 6 B. Eng. students' graduation projects Published 4 papers in KDD, ICDM, WSDM and CIKM.

## HONORS AND AWARDS

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OCT. 2018	Overseas PhD Scholarship (top 2%)
OCT. 2017	KLA-Tencor Scholarship (top 5%)
OCT. 2014	Excellent Junior PhD Student Scholarship
JUNE 2014	HE Zhijun Prize for outstanding achievement (top 3%)
SEP. 2013	The 2 <sup>rd</sup> prize for outstanding academic student award (top 15%)
SEP. 2012	Excellent student cadre (5/168)
SEP. 2011	The 3 <sup>rd</sup> prize for outstanding academic student award (top 25%)

## RESEARCH EXPERIENCES

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- Jul. 2018 - Jan. 2019 Lifelong User Modeling
- Tackling with lifelong sequential user behavior modeling.
  - Captures multi-scale sequential dependencies.
  - Applied methodologies in user response prediction problems.
  - Published as oral presentation in SIGIR 2019.
- Oct. 2018 - Jan. 2019 Deep Learning for Bid Landscape Forecasting
- Market price distribution in real-time bidding advertising.
  - Aiming at functional modeling for market price distribution.
  - Flexible forecasting results of P.D.F. and C.D.F.
  - Deep Learning for probability distribution regression.
  - Published as oral presentation in KDD 2019.
- Oct. 2017 - May. 2018 Deep Learning for Survival Analysis
- Utilized deep learning for flexible time-to-event data modeling.
  - First work using auto-regressive modeling for survival analysis.
  - State-of-the-art in three real-world domains.
  - Published as oral presentation in AAAI 2019.
- Aug. 2017 - May. 2018 Deep Learning for Multi-touch Conversion Attribution
- Utilized RNN to model sequential activity patterns.
  - Applied attention mechanism for the optimal conversion attribution.
  - First work utilizing attribution for subsequent decision makings.
  - Published in CIKM 2018.
- Oct. 2016 - May. 2017 Profit-oriented Bidding Framework for Display Advertising
- Combined user response prediction, bid landscape forecasting and bid optimization altogether.
  - Proposed a joint optimization framework for profit maximization.
  - Provided theoretical proof of optimal bidding function.
  - Improved over 33% profit gain in online platform.
  - Published one paper in TKDE 2018.
- Oct. 2016 - Feb. 2017 Dynamic Attention Deep Model for Article Recommendation
- Deep model with human' demonstration learning.
  - Proposed a dynamic attention method for capturing varying preferences.
  - Published one paper in KDD 2017.
- Jun. 2016 - May. 2017 Reinforcement Learning for Online Advertising
- Model real-time bidding as a Markov decision process.
  - First work applying RL in real-time bidding advertising.
  - Improved over 40% profit gain in online platform.
  - Published two papers in WSDM 2017 and CIKM 2017.
- Sep. 2015 - Jan. 2016 User Response Prediction in Display Advertising
- Combined user response prediction and bid optimization together.
  - Proposed a unified learning objective for profit maximization.
  - Utilized convex optimization and functional optimization.
  - Published one paper in CIKM 2016.
- Mar. - May. 2015 QA System over Linked Open Data (QALD)
- For answering non-aggregation questions over knowledge graph.
  - Proposed a graph traversal-based methodology.
  - Achieved 2-nd place in QALD competition.
  - Published in JIST 2015.

## OTHER EXPERIENCE

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- MAR. 2017 - JUL. 2018 Developer of Bidding Strategy at Shanghai License Plate Market Protocol Hacking and Auto-bidding Algorithm Developer
- OCT. 2014 - DEC. 2017 Leader of Technical Group for Synhealth.cn  
A platform for diabetes patient health status tracking
- APR. - OCT. 2015 Founder and Technical Group Leader of Tao Yuan Yi Meng Co.,Ltd.  
An online business platform for peach farmers
- MAY - DEC. 2013 Backend Engineer at Youqian Network Technology Co.,Ltd.  
*Server Engineering* provided software framework for business model
- JAN. - JUNE 2011 Executive Committee in Student Council of Zhejiang University

## PUBLICATIONS ([GOOGLE SCHOLAR](#))

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- SIGIR 2019 **Kan Ren**, Jiarui Qin, Yuchen Fang, et al. *Lifelong Sequential Modeling with Personalized Memorization for User Response Prediction*.
- KDD 2019 **Kan Ren**, Jiarui Qin, Lei Zheng, Zhenyu Yang, Weinan Zhang, Yong Yu. *Deep Landscape Forecasting for Real-time Bidding Advertising*.
- AAAI 2019 **Kan Ren**, Jiarui Qin, Lei Zheng, Zhenyu Yang, Weinan Zhang, Yong Yu. *Deep Recurrent Survival Analysis*.
- AAAI 2019 Zhiming Zhou, Guansong Lu, Yuxuan Song, **Kan Ren**, Yong Yu. *Guiding the One-to-one Mapping in CycleGAN via Optimal Transport*.
- CIKM 2018 **Kan Ren**, Yuchen Fang, Weinan Zhang, Shuhao Liu, Jiajun Li, Ya Zhang, Yong Yu, Jun Wang. *Learning Conversion Attribution with Dual-attention Mechanism for Online Advertising*.
- TKDE 2018 **Kan Ren**, Weinan Zhang, Ke Chang, Yifei Rong, Yong Yu, and Jun Wang. *Bidding Machine: Learning to Bid for Directly Optimizing Profits in Display Advertising*.
- KDD 2017 Lantao Yu, Xuejian Wang, **Kan Ren**, Guanyu Tao, Weinan Zhang, Yong Yu, Jun Wang. *A Dynamic Attention Deep Model for Article Recommendation by Learning Human Editors' Demonstration*.
- CIKM 2017 Yuxuan Song, **Kan Ren**, Han Cai, Weinan Zhang, Yong Yu. *Volume Ranking and Sequential Selection in Programmatic Display Advertising*.
- CIKM 2016 **Kan Ren**, Weinan Zhang, Yifei Rong, Haifeng Zhang, Yong Yu, Jun Wang. *User Response Learning for Directly Optimizing Campaign Performance in Display Advertising*.
- ICLR 2018 Zhiming Zhou, Han Cai, Shu Rong, Yuxuan Song, **Kan Ren**, Weinan Zhang, Jun Wang, Yong Yu. *Activation Maximization Generative Adversarial Nets*.
- WSDM 2017 Han Cai, **Kan Ren**, Weinan Zhang, Kleanthis Malialis, Jun Wang, Yong Yu and Defeng Guo. *Real-Time Bidding by Reinforcement Learning in Display Advertising*.
- WSDM 2017 Haifeng Zhang, Weinan Zhang, Yifei Rong, **Kan Ren**, Wenxin Li and Jun Wang. *Managing Risk of Bidding in Display Advertising*.
- ICDM 2016 Yanru Qu, Han Cai, **Kan Ren**, Weinan Zhang, Yong Yu, Ying Wen, Jun Wang. *Product-based Neural Networks for User Response Prediction*.
- ECML-PKDD 2016 Yuchen Wang, **Kan Ren**, Weinan Zhang, Yong Yu. *Functional Bid Landscape Forecasting for Display Advertising*.
- JIST 2015 Chenhao Zhu, **Kan Ren**, Xuan Liu, Haofen Wang, Yiding Tian, Yong Yu. *A Graph Traversal Based Approach to Answer Non-Aggregation Questions Over DBpedia*.

## PROJECTS

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- 2019 Deep Learning for Market Price Modeling in RTB Advertising ([Github](#))
- 2019 Sequential User Modeling based on Deep Learning ([Github](#))
- 2018 Auto-regressive Survival Analysis ([Github](#))
- 2018 Deep Multi-touch Conversion Attribution Methodology ([Github](#))
- 2017 Profit-oriented Real-time Bidding Framework ([Paper](#))([Github](#))
- 2016 Optimal Real-time Bidding Framework ([Paper](#))
- 2016 Product-based Neural Network for CTR Prediction ([Paper](#))
- 2015 Answer Non-Aggregation Questions Over DBpedia ([Link](#))
- 2015 2<sup>nd</sup> Place in Question Answering over Linked Data (QALD) Competition
- 2013 Sentiment Analysis over Face Recognition (Scientific Research Project at Zhejiang University)
- 2013 Gesture Recognition (Zhejiang Science and Innovation Program)