

# SHUAI ZHANG

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## ACADEMIC POSITION

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### Postdoctoral Researcher

*System group, ETH Zurich*

Department of Computer Science

Led by Dr. Ce Zhang

Feb 2020 - Present

*Zurich, Switzerland*

## EDUCATION

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### Doctor of Philosophy (Ph.D.)

*University of New South Wales*

School of Computer Science and Engineering

Thesis: *Personalized Recommendation: Neural Architectures and Beyond*

Supervised by Dr. Lina Yao, Liming Zhu, and Sherry Xu

Nov. 2019

*Sydney, Australia*

### Bachelor

*Nanjing University*

Major: Information Management and Information System

Jun. 2014

*Nanjing, China*

## PUBLICATIONS

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### Book Chapters

1. *Deep Learning for Recommender Systems (to appear)*

**Shuai Zhang**, Yi Tay, Lina Yao, Aixin Sun, Ce Zhang.

Book Title: *Recommender Systems Handbook, Third Edition*. 2020

Editors: Francesco Ricci, Lior Rokach, Bracha Shapira.

Press: Springer.

2. *Recommender Systems (Link)*

**Shuai Zhang**, Aston Zhang, Yi Tay.

Book Title: *Dive into Deep Learning*. 2019

Book Authors: Aston Zhang, Zack C. Lipton, Mu Li, and Alex J. Smola.

Textbook for STAT 157 Introduction to Deep Learning at UC Berkeley

3. *Deep Neural Networks meet Recommender Systems*

**Shuai Zhang**, Lina Yao, Aixin Sun, Guibing Guo, Xiwei Xu, Liming Zhu.

Book Title: *Big Data Recommender Systems: Recent Trends and Advances*, 2019

Book Editors: Osman Khalid, Samee U. Khan, and Albert Y. Zomaya.

Press: Institution of Engineering and Technology

### Conference and Workshop Papers

1. *Learning User Representations with Hypercuboids for Recommender Systems.*

**Shuai Zhang**, Huoyu Liu, Aston Zhang, Yue Hu, Ce Zhang, Yumeng Li, Tanchao Zhu, Shaojian He, Wenwu Ou.

The 14th ACM International Conference on Web Search and Data Mining (WSDM), 2021.

2. *Suspicious Massive Registration Detection via Dynamic Heterogeneous Graph Neural Networks.*  
Xi Rao, **Shuai Zhang**, Zhichao Han, Zitao Zhang, Wei Min, Mo Cheng, Yinan Shan, Yang Zhao, Ce Zhang.  
Workshop on Deep Learning on Graphs: Methods and Applications. (**AAAI Workshop**), 2021.
3. *Ease.ML: A Lifecycle Management System for Machine Learning.*  
Leonel Aguilar Melgar, David Dao, Shaoduo Gan, Nezihe Merve Gürel, Nora Hollenstein, Jiawei Jiang, Bojan Karlaš, Thomas Lemmin, Tian Li, Yang Li, Xi Rao, Johannes Rausch, Cedric Renggli, Luka Rimanic, Maurice Weber, **Shuai Zhang**, Zhikuan Zhao, Kevin Schawinski, Wentao Wu, Ce Zhang.  
The Conference on Innovative Data Systems Research (**CIDR**), 2021.
4. *Symmetric Metric Learning with Adaptive Margin for Recommendation.*  
Mingming Li, **Shuai Zhang**, Fuqing Zhu, Liangjun Zang, Wanhui Qian, Jizhong Han, Songlin Hu.  
The 34th AAAI Conference on Artificial Intelligence (**AAAI**), 2020.
5. *HyperML: A Boosting Metric Learning Approach in Hyperbolic Space for Recommender Systems.*  
Lucas Vinh Tran, Yi Tay, **Shuai Zhang**, Gao Cong, Xiaoli Li.  
The ACM International Conference on Web Search and Data Mining (**WSDM**), 2020.  
**Best Paper Award Runner-Up**
6. *Quaternion Knowledge Graph Embeddings.*  
**Shuai Zhang**, Yi Tay, Lina Yao, Qi Liu.  
Thirty-third Conference on Neural Information Processing Systems (**NeurIPS**) , 2019.
7. *DeepRec:An Open-Source Toolkit for Deep Learning based Recommendation.*  
**Shuai Zhang**, Yi Tay, Lina Yao, Bin Wu, Aixin Sun.  
The 28th International Joint Conference on Artificial Intelligence (**IJCAI Demo**) , 2019.  
**Over 900 stars at GitHub**
8. *Quaternion Collaborative Filtering for Recommendation.*  
**Shuai Zhang**, Lina Yao, Lucas Vinh Tran, Aston Zhang, Yi Tay.  
The 28th International Joint Conference on Artificial Intelligence (**IJCAI**) , 2019.
9. *Lightweight and Efficient Neural Natural Language Processing with Quaternion Networks.*  
Yi Tay, Aston Zhang, Anh Tuan Luu, Jinfeng Rao, **Shuai Zhang**, Shuohang Wang, Jie Fu and Siu Cheung Hui.  
The 57th Annual Meeting of the Association for Computational Linguistics (**ACL**) , 2019.
10. *Next Item Recommendation with Self-Attentive Metric Learning.*  
**Shuai Zhang**, Yi Tay, Lina Yao, Aixin Sun, Jake An.  
Workshop on Recommender Systems Meet Natural Language Processing (**AAAI workshop**), 2019.
11. *Holographic Factorization Machines for Recommendation.*  
**Shuai Zhang**, Yi Tay, Anh Tuan Luu, Siu Cheung Hui, Lina Yao, Vinh Tran.  
The 33rd AAAI Conference on Artificial Intelligence (**AAAI**), 2019.
12. *Adaptive Cognitive Activity Recognition with Reinforced Attentive CNN.*  
Xiang Zhang, Lina Yao, Xianzhi Wang, Wenjie Zhang, **Shuai Zhang**, and Yunhao Liu..  
The 19th IEEE International Conference on Data Mining (**ICDM**) , 2019.
13. *NeuRec: On Nonlinear Transformation for Personalized Ranking.*  
**Shuai Zhang**, Lina Yao, Aixin Sun, Sen Wang, Guodong Long, Manqing Dong.  
The 27th International Joint Conference on Artificial Intelligence (**IJCAI**) , 2018.

14. *AutoSVD++: An Efficient Hybrid Collaborative Filtering Model via Contractive Auto-encoders.*  
**Shuai Zhang**, Lina Yao, Xiwei Xu.  
 The 40th International ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR**) , 2017.

## Journal Papers

1. *Unraveling Metric Vector Spaces with Factorization for Recommendation*  
**Shuai Zhang**, Lina Yao, Bin Wu, Xiwei Xu, Xiang Zhang, Liming Zhu.  
**IEEE Transactions on Industrial Informatics**, 2019
2. *Deep Learning based Recommender System: A Survey and New Perspectives*  
**Shuai Zhang**, Lina Yao, Aixin Sun, Yi Tay.  
**ACM Computing Surveys**, 2019
3. *Thing-of-Interest Recommendation in the Internet of Things: Requirements, Challenges and Directions*  
 Lina Yao, Xianzhi Wang, Quan Z. Sheng, Schahram Dustdar, **Shuai Zhang**.  
**IEEE Internet Computing**, 2019
4. *Internet of Things Meets Brain-Computer Interface: A Unified Deep Learning Framework for Enabling Human-Thing Cognitive Interactivity*  
 Xiang Zhang, Lina Yao, **Shuai Zhang**, Salil S. Kanhere, Quan Z. Sheng, Yunhao Liu.  
**IEEE Internet of Things Journal** , 2018
5. *Rating Prediction via Generative Convolutional Neural Networks based Regression*  
 Xiaodong Ning, Lina Yao, Xianzhi Wang, Boualem Benatallah, Manqing Dong, **Shuai Zhang**.  
**Pattern Recognition Letters**, 2018

## INDUSTRY EXPERIENCE

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<b>Intern</b>	Jul 2019 - Jan 2020
<i>Amazon</i>	<i>Shanghai, China</i>
Mentor: Dr. Aston Zhang	
I wrote the chapter <i>Recommender Systems</i> (include model implementation) for the book <b><i>Dive into Deep Learning</i></b> (by Aston Zhang, Zack C. Lipton, Mu Li, Alexander J. Smola)	
<b>Intern</b>	Oct 2018 - Dec 2018
<i>Tencent</i>	<i>Beijing, China</i>
Project: deep learning for news recommendation	
<b>Software Engineer</b>	Jul 2014 - Jun 2016
<i>OPPO Mobile</i>	<i>Shenzhen, China</i>
Develop Android applications.	

## AWARDS & HONORS

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WSDM Best Paper Award Runner-Up	2020
NeurIPS, IJCAI, AAI Travel Grant	2019
UNSW Postgraduate Research Student Support Funds	2018-2019
ACM SIGIR Travel Grant	2017
UNSW Tuition Fee Scholarship	2016-2020
Data61 Student Scholarship, Data61, CSIRO	2016-2020

## TEACHING & SUPERVISION

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### Teaching Assistant

*Big Data*, department of computer science, ETH Zurich, 2020

*Product Analytics*, UNSW Business School, 2019

### Supervision

Maksimov Anton (co-supervisor), master thesis, ETH Zurich, 2020-2021

Xiaocong Chen (co-supervisor), honors student of CSE, UNSW, 2018

## PROFESSIONAL ACTIVITIES

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### Program Committee Member / Invited Reviewer

- 2021: AAI, IJCAI (Senior PC), NAACL-HLT, EACL
- 2020: NeurIPS, EMNLP, AAI, SIGIR, ACL, ACL-IJCNLP, KDD(sub-reviewer)
- 2019: IJCAI(sub-reviewer), ICDE workshop

### Invited Journal Reviewer

Nature Communications, ACM computing surveys, ACM Transactions of Information Systems, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Mobile Computing, IEEE Journal of Biomedical and Health Informatics, IEEE Intelligent Systems, IEEE Access, PLOS ONE, Knowledge-based Systems, Pattern Recognition Letters, Neurocomputing, Engineering Applications of Artificial Intelligence, Multimedia Tools and Applications, etc.

### Conference Volunteering

AAAI 2019, IJCAI 2019.

## PROJECTS

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### Open-source Project: DeepRec, 2016-2019

*Creator*, #stars > 900

A library for deep learning based recommendation algorithms with Tensorflow.

### Open-source Book: Dive into Deep Learning, 2019

*Contributor*, #stars > 6000

Dive into Deep Learning by Aston Zhang, Zack C. Lipton, Mu Li and Alex J. Smola.

### Recommendation at RAIZ INVEST, 2018 - 2019

*Student Assistant*

Investigating on recommending raiz partners to customers.

## TALKS & PRESENTATIONS

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1. *Think what you think: personalized recommendation*; Chinese Science Club in Zurich, 2020.09
2. *Towards the new generation of recommender systems*; shenlanxueyuan.com, 2020.08
3. *Personalized Recommendation: Neural Architectures and Beyond*; Nanjing University, 2019.12
4. *Quaternion Collaborative Filtering for Recommendation*; IJCAI'19, Macau, 2019.08
5. *Holographic Factorization Machines for Recommendation*; AAI'19, Honolulu, 2019.01
6. *Next Item Recommendation with Self-Attentive Metric Learning*; Northeastern University (shenyang, Dec. 2018) and RecNLP'19 (Honolulu, Jan. 2019).

7. *NeuRec: On Nonlinear Transformation for Personalized Ranking*; IJCAI'18, Stockholm, 2018.07.
8. *Deep Learning for Recommender Systems*; RMIT University, Melbourne. 2017.11. Hosted by Prof Mark Sanderson.