

# Zhiping (Patricia) Xiao

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## EDUCATION

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- University of California at Los Angeles**, California, US Sep 2018 – Feb 2024  
*Computer Science PhD student supervised by Prof. Yizhou Sun, co-advised by Prof. Mason A. Porter, with GSR (Graduate Student Researcher) scholarship*  
**Graduate Thesis:**
  - *Ideology Analysis for Social Media Users via Multi-Modal Data Mining***Selected courses:**
  - Probabilistic Graphical Models for Structured Data (CS249, A)
  - Optimization Methods for Large Scale Systems (ECE236C, A)
  - Introduction to Data Mining (CS145, A)
  - Machine Learning Algorithm (CS260, A)
- University of California at Berkeley**, California, US Aug 2016 – May 2018  
*Computer Science MS at Berkeley Institute of Design (BiD), with GSI (Graduate Student Instructor) scholarship*  
**Graduate Thesis:**
  - *AutoQuiz: an online, adaptive, test practice system***Selected courses:**
  - Machine Learning in Education (INFO C260F, A+)
  - History and Theory of New Media (NWMEDIA200, A)
  - Image Manipulation and Computational Photography (CS294-26, A-)
- Peking University**, Beijing, China Sep 2012 – Jul 2016  
*Bachelor of Computer Science (with Highest Honor, Summa Cum Laude)*  
**Selected courses:**
  - Computer Graphics; Introduction to Visual Computing; Fundamentals of Digital Media Technology
  - Aesthetics; Outline of Chinese Art; Social Psychology; Network and Crowds
  - Introduction to Intelligent Technology; Data Structures and Algorithms; Algorithm Design and Analysis
  - Advanced Mathematics; Linear Algebra; Set Theory and Graph Theory
- University of California at Berkeley**, California, USA Jul 2013 – Aug 2013  
*Summer Exchange Student at Art School*  
**Courses:** Approach to Painting (Art102 A+); Introduction of Visual Thinking (Art8 A+)

## RESEARCH EXPERIENCES

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- Research Assistant**, Scalable Analytics Institute, University of California at Los Angeles Sep 2018 – till date  
*Advisor: Prof. Yizhou Sun*
  - Working on multi-task learning using multi-modality data
  - Currently focusing on graph embedding in social networks
- Research Assistant**, Berkeley Institute of Design (BiD), University of California at Berkeley Jan 2017 – May 2018  
*Advisor: Prof. Dan Garcia*
  - Working on Implementing an Automatic Quiz-question-generation Systems Used in Online Courses, so as to help students prepare for exams efficiently.
  - Backend knowledge tracing model is based on DKT model
- Research Assistant**, Institute of Networking, Peking University Feb 2016 – Jun 2016  
*Mentor: Prof. Xiaoru Yuan*
  - Visualization and Visual Computing
  - Financial visualization team, implemented the first version of the Bitcoin transaction visualization project
- Research Assistant**, Institute of Networking, Peking University Jul 2014 – Oct 2015  
*Advisor: Associate Prof. Kaigui Bian*

- Applied a special math sequence to the channel-hopping model so as to enhance its behavior
- Design & implemented an Android application Zuile, an anonymous, location-based social network App
- Designed the user interface and implemented the front-end of several Apps

## INTERN EXPERIENCES

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- Visiting Scholar**, Data Science and Engineering Lab (DSE), Michigan State University June 2022 – Sep 2022  
*Mentor: Prof. Jiliang Tang, Prof. Wei Jin*
- Working on designing trainable prompts for graph neural networks
  - Focusing on graph-level classification tasks on chemistry and biology molecule data sets
- Applied Scientist Intern**, Machine Learning Group, Amazon Web Services (AWS) July 2019 – Sep 2019  
*Mentor: Dr. Chenguang Wang, Dr. Mu Li*
- Big Worked on machine-reading-comprehension task.
  - Implemented QA task solving SQuAD 1.1 and 2.0 with BERT for an AutoML toolkit, and explored potential further improvements on its performance.
- Software Engineer Intern**, Tianyancha Algorithm Team, Jindi Tech. May 2017 – Aug 2017  
*Mentors: Dr. Chao Liu, Mr. Hao Cheng*
- Big Data Visualization of Chinese Enterprises.
  - Users behaviors tracing visualization frontend & parts of the backend
  - The first version of PDF2HTML converter used for displaying enterprises' documents more interactively
- Research Software Engineer Intern**, Internet Graphics Group, Microsoft Research Asia Oct 2015 – Jan 2016  
*Mentor: Dr. Weiwei Cui*
- Applied art and psychology principles towards more precise visualization
- Research Intern**, Language Technology Institute, Carnegie Mellon University Jul 2015 – Sep 2015  
*Advisor: Prof. Alex Rudnicky*
- Built the Tick-Tock Chinese dialog system, based on a Non-Goal-Oriented English version
  - Crawled Chinese dialogue data, built the Chinese Segment Module and a Chinese Question-Answer database

## PUBLICATIONS

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- Weikai Li, **Zhiping Xiao**, Xiao Luo, Yizhou Sun. **“Fast Inference of Removal-Based Node Influence”**, in proceedings of WWW 2024 as a full paper.
- Wei Ju, Zheng Fang, Yiyang Gu, Zequn Liu, Qingqing Long, Ziyue Qiao, Yifang Qin, Jianhao Shen, Fang Sun, **Zhiping Xiao**, Junwei Yang, Jingyang Yuan, Yusheng Zhao, Xiao Luo, Ming Zhang. **“A Comprehensive Survey on Deep Graph Representation Learning”**, Neurl Networks 2024, 173 (5), 1-50.
- Wei Ju, Yusheng Zhao, Yifang Qin, Siyu Yi, Jingyang Yuan, **Zhiping Xiao**, Xiao Luo, Xiting Yan, Ming Zhang, **“COOL: A conjoint perspective on spatio-temporal graph neural network for traffic forecasting”**, Information Fusion, 2024, 102341
- **Zhiping Xiao**, Jeffrey Zhu, Yining Wang, Pei Zhou, Wen Hong Lam, Mason A. Porter, Yizhou Sun. **“Detecting political biases of named entities and hashtags on Twitter”**, in journal of EPJ Data Science, Volume 12, Issue 1, Pages 1-26.
- **Zhiping Xiao**, Weiping Song, Haoyan Xu, Zhicheng Ren, Yizhou Sun. **“TIMME: Twitter Ideology-detection via Multi-task Multi-relational Embedding”**, in proceedings of the 26th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2020), Virtual Event, CA, USA, August 23-27, 2020. Pages 2258-2268.
- Weiping Song, **Zhiping Xiao**, Yifan Wang, Laurent Charlin, Ming Zhang, Jian Tang, **“Session-Based Social Recommendation Via Dynamic Graph Attention Networks”**, in proceedings of 12<sup>th</sup> ACM International Conference on Web Search and Data Mining (WSDM2019), Melbourne Australia, February 11 – 15, 2019. Pages 555-563.
- Weiping Song, Chence Shi, **Zhiping Xiao**, Zhijian Duan, Yewen Xu, Ming Zhang, Jian Tang. **“AutoInt: Automatic Feature Interaction Learning via Self-Attentive Neural Networks”**, in proceedings of the 28th ACM International Conference on Information and Knowledge Management (CIKM 2019), Beijing, China, November 3-7, 2019. Pages 1161-1170.

- **Zhiping Xiao**, “AutoQuiz: an online, adaptive, test practice system”. Master Thesis at University of California at Berkeley. Technical Report No. UCB/EECS-2018-54, May 11, 2018.
- **Zhiping Xiao**, Siqi Li and Zachary Pardos. “AutoQuiz: an individualized test-oriented tutoring system for students”. **SIGCSE 2018** (poster), Page 1089.
- Chris Johnson, Monica McGill, Durell Bouchard, Michael K. Bradshaw, Víctor A. Bucheli, Laurence D. Merkle, Michael James Scott, Z. Sweedyk, J. Ángel, **Zhiping Xiao**, and Ming Zhang. “**Game Development for Computer Science Education**”, in proceedings of **2016 ITiCSE Working Group Reports**, Arequipa. Peru, July 9 - 13, 2016. Pages 23-44.
- Lin Chen, **Zhiping Xiao**, Kaigui Bian, Shuyu Shi, Rui Li, and Yusheng Ji. “**Skolem Sequence Based Self-adaptive Broadcast Protocol in Cognitive Radio Networks**”, in proceedings of 2016 IEEE 83rd Vehicular Technology Conference (**VTC2016-Spring**), Nanjing, China, May 15 - 18, 2016. Pages 1-5.

## PREPRINT

- Bin Feng, Zequn Liu, Nanlan Huang, **Zhiping Xiao**, Haomiao Zhang, Srбуhi Mirzoyan, Hanwen Xu, Jiaran Hao, Yinghui Xu, Ming Zhang, Sheng Wang. “**A foundation model for bioactivity prediction using pairwise meta-learning**”, bioRxiv, 2023.10. 30.564861
- Hourun Li, Yusheng Zhao, Zhengyang Mao, Yifang Qin, **Zhiping Xiao**, Jiaqi Feng, Yiyang Gu, Wei Ju, Xiao Luo, Ming Zhang. “**A Survey on Graph Neural Networks in Intelligent Transportation Systems**”, CoRR abs/2401.00713 (2024)
- Yifang Qin, Wei Ju, Xiao Luo, Yiyang Gu, **Zhiping Xiao**, Ming Zhang. “**PolyCF: Towards the Optimal Spectral Graph Filters for Collaborative Filtering**”, CoRR abs/2401.12590 (2024)
- Wei Ju, Siyu Yi, Yifan Wang, Qingqing Long, Junyu Luo, **Zhiping Xiao**, Ming Zhang. “**A Survey of Data-Efficient Graph Learning**”, CoRR abs/2402.00447 (2024)

## TEACHING EXPERIENCES

- Head Teaching Assistant**, “Introduction to Data Science” in UCLA (CS97 Summer) June 2023 – July 2022  
*Instructor: Prof. Yizhou Sun, Fred Xu*
- Help with organizing discussion sessions, making homework questions
  - Help with the students’ team projects
- Teaching Assistant**, “Software Engineering” in UCLA (CS130) Sep 2021 – June 2022, Sep 2022 – Jan 2023  
*Instructor: Prof. Miryung Kim*
- Help with organizing discussion sessions, Q&A and grading, and also making homework & exam questions
  - Being mentor of the project teams and help the undergrads with their final projects
- Teaching Assistant**, “Programming Languages” in UCLA (CS131) Sep 2019 – June 2020  
*Instructor: Prof. Paul Eggert*
- Help with organizing discussion sessions, Q&A and grading
  - I started a Github organization for this course in Winter 2020: <https://github.com/CS131-TA-team>
- Teaching Assistant**, “Beauty and Joy of Computing” in UC Berkeley (CS10) Jan 2017 – May 2018  
*Instructor: Prof. Dan Garcia*
- Help with preparing course materials, including contents for each discussion in the discussion sessions every week, and part of the questions in quizzes, refining midterm & final exam questions
  - Answering students’ questions online, in lab sessions, discussions, and during office hours

## PROFESSIONAL SKILLS

- **Programming Languages:** C/C++, Python, JavaScript, Java, Scratch, SQL, SAS, Prolog, Ocaml, Scheme
- **Platforms/APIs:** Linux, Pytorch, Photoshop, Adobe Illustrator, D3, OpenGL, OpenCV, Tensorflow, Flask

## SELECTED HONORS AND AWARDS

- **CS Graduate Student Researcher (GSR) award**, UCLA, Sep 2018 – March 2024
- **EECS Graduate Student Instructor (GSI) award**, UC Berkeley, Aug 2016 – Jun 2018
- **Excellent Student Award** (top 5%), Peking University, 2015

- **Junzheng Scholarship** (Hui-Chun Chin and Tsung-Dao Lee Chinese Undergraduate Research Fund, top 1%), Peking University, 2014-2015
- **8508 Alumni Scholarship** (top 5%), Peking University, 2014
- **Third Prize** of Peking University Young Scientist Symposium on Informatics, 2015
- **Top 10 Winner Prize** (ranked No. 4 among 162 finalists), National wide "Green Shoots" Contest of College Students' Mobile App Development, Shanghai Government, 2015
- **Third Prize** of the 12<sup>th</sup> PKU Computer Application Design Contest, 2015
- **Winner Prize** of the 5<sup>th</sup> Computer - Computer Game Competition (Four Color Map Game, top 10%), Peking university, 2013
- **Third Prize** of the 12<sup>th</sup> PKU ACM/ICPC Programming Contest, Peking University, 2013
- **First Prizes** in the Annual National Drawing Competition, Ministry of Education, China, 2001, 2002, 2003, 2004, 2006 respectively
- **First Prize** in the Art and Design Competition at the International Year for the Culture of Peace, Po Leung Kuk, Hong Kong, 2000. The awarded painting was produced as a 9-minute tutorial video by a Hong Kong art institute (in Cantonese)

### **EXTRA CURRICULUM ACTIVITIES**

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**Stanford University**, California, USA

*Jul – Aug 2010*

- *Stanford EPGY - Education Program for Gifted Youth*
- Pre-Collegiate Summer Institute: International Relations

### **INTERESTS**

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- **Arts:** Musical Instruments (Piano, Violin, Cucurbit Flute), Drawing (Chinese Painting, Gouache, Watercolor, Sketching, Acrylic Painting)
- **Sports:** Ping-Pong (ranked 4<sup>th</sup> at PKU EECS 2015 Lab-Cup Group Competition), Swimming, Skiing, Skating