Zhiyun Ren

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Research Interests

- Educational Data Mining
- Recommender Systems

Education

- **Ph.D candidate in Computer Science** — Fairfax, VA
  George Mason University — 08/2014 – Present
  – Thesis: Educational Data Mining
  – Advisor: Dr. Huzefa Rangwala
- **M.S. in Automation Science and Electric Engineering** — Beijing, China
  Beihang University — 09/2010 – 01/2013
  – Thesis: Text Extraction from Complex Background
- **B.S. in Automation** — Dalian, China
  Dalian University of Technology — 09/2006 – 01/2010

Experience

- **George Mason University, Data Mining lab** — Fairfax, VA
  Graduate Research Assistant — 08/2014 – Present
  – Implement educational data mining (EDM) in different environments (e.g., traditional college courses, Massive Open Online Courses (MOOCs)).
  – Apply different techniques (e.g., Recommender Systems, Deep Learning) on various EDM problems.
  – Published 4 research papers (3 papers are first-author).
  – Submitted 2 papers (1 paper is first-author).
- **Adobe, NLP lab** — San Jose, CA
  Full-time Research Intern — 05/2018 – 08/2018
  – Mentors: Walter Chang, Zhihong Ding, Franck Dernoncourt, Doo Soon Kim, Seokhwan Kim
  – Document Recommendation based on Knowledge Graph and User Behavior
  – Build knowledge graph for document based on the document content.

– Incorporate deep learning techniques with heterogeneous information network to recommend helpx/tutorial pages for Photoshop users.

- **VMware** Beijing, China
  Software Engineer 01/2013 – 06/2013
- **National Lab of Pattern Recognition, Chinese Academy of Sciences** Beijing, China
  Research Intern 04/2012 – 07/2012
  – Mentor: Dr. Chenglin Liu
  – Research on text detection algorithms in colorful images.
- **Beihang University** Beijing, China
  Graduate Research Assistant 09/2010 – 01/2013
  – Fast text detection in complex images.
  – Published 1 research paper, and is first-author.

Publications

1. **Zhiyun Ren**, Xia Ning, Huzefa Rangwala, "ALE: Additive Latent Effect Models for Grade Prediction". SIAM International Conference on Data Mining 2018 (SDM 2018). **(acceptance rate: 23.2%)**
2. **Zhiyun Ren**, Xia Ning, Huzefa Rangwala, "Grade Prediction with Temporal Course-wise Influence". International Conference on Educational Data Mining 2017 (EDM 2017). **(acceptance rate: 17%)**
3. **Zhiyun Ren**, Huzefa Rangwala, Aditya Johri, "Predicting Performance on MOOC Assessments using Multi-Regression Models". International Conference on Educational Data Mining 2016 (EDM 2016).
4. Asmaa Elbadrawy, Agoritsa Polyzou, **Zhiyun Ren**, Mackenzie Sweeney,George Karypis, Huzefa Rangwala. "Predicting Student Performance Using Personalized Analytics". Computer 49.4 (2016): 61-69.
5. **Zhiyun Ren**, Linlin Huang. "A Fast and Accurate Text Detection Method from Complex Images". International Conference on Signal Processing (ICSP), 2012 IEEE 11th International Conference on. Vol. 2. IEEE, 2012.

Under Review

1. **Zhiyun Ren**, Xia Ning, Andrew Lan, Huzefa Rangwala, "Grade Prediction Based on Cumulative Knowledge and Co-taken Courses". SIAM: SIAM International Conference on Data Mining 2019 (SDM 2019).
2. Zhouxiang Cai, **Zhiyun Ren**, Huzefa Rangwala, "Capturing Student Interaction within Learning Management Systems (LMS) for Identification of At-Risk Students". International Learning Analytics and Knowledge Conference 2019 (LAK 2019).

Membership

- Membership, Society for Industrial and Applied Mathematics (SIAM)

Awards, Patent, & Honors

SDM PhD forum Student Travel Award ……..……... 2018
George Mason Graduate Student Travel Award ……..…..……..…... 2018
WiML Student Travel Award ……..……..…….……... 2017
CRA-W Student Travel Award …….…….…….... 2015

Presentations & Talks

1. "Helpx/Tutorial Recommendation based on Creative Knowledge Graph", at **Adobe Research**, San Jose, CA, Aug., 2018.
2. "ALE: Additive Latent Effect Models for Grade Prediction", at **SIAM International Conference on Data Mining (SDM)**, San Diego, CA, May, 2018.
3. "Grade Prediction with Temporal Course-wise Influence", at **International Conference on Educational Data Mining (EDM)**, Wuhan, China, June, 2017.
4. "Performance Prediction with Cumulative Knowledge", at **PhD CS Research Symposium**, George Mason University, Fairfax, March, 2017.
5. "Predicting Performance on MOOC Assessments using Multi-Regression Models", at **International Conference on Educational Data Mining (EDM)**, Raleigh, NC, June, 2016.

Professional Activities

- Journal Reviewer, *IEEE Transactions on Learning Technologies (TLT),* 2017
- Student Reviewer, *International World Wide Web Conference (WWW),* 2017
- Student Reviewer, *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (SIGKDD),* 2018
- Student Reviewer, *International Conference on Learning Analytics and Knowledge (LAK),* 2017
- Student Reviewer, *IEEE International Conference on Data Mining (ICDM),* 2016, 2017
- Student Reviewer, *SIAM International Conference on Data Mining (SDM),* 2015, 2019
- Student Reviewer, *Conference on In- formation and Knowledge Management (CIKM),* 2018
- Student Reviewer, *The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD),* 2018
- Student Reviewer, *IEEE International Conference on Computational Advances in Bio and medical Sciences (ICCABS),* 2016
- Student Reviewer, *IEEE Symposium Series on Computational Intelligence (SSCI),* 2016
- Student Reviewer, *IEEE International Conference on Data Science and Advanced Analytics (DSAA)*, 2016, 2017
- Student Reviewer, *The Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)*, 2017

Teaching Experience

- **Supply Instructor,** CS 484: Data Mining — Fairfax, VA
  Dept. Computer Science, George Mason University — Aug. 2017
  – Teach one lecture in Data Mining class.
- **Teaching Assistant,** CS 222: Computer Programming for Engineers — Fairfax, VA
  Dept. Computer Science, George Mason University — Fall 2014, Spring 2015
  – Held office hours and graded homework/project.

References

- **Huzefa Rangwala, Ph.D (Advisor)**
  Professor, Dept. of Computer Science, George Mason University
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  – Phone: +1 (703) 993-3826
  – Email: rangwala@cs.gmu.edu
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