

Haoran Zhang

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Education

- **University of Pittsburgh** **Pittsburgh, PA**
2015–2021
 - *Ph.D. in Computer Science*
 - Advised by Prof. Diane Litman
 - Research Interest: Natural Language Processing and Machine Learning
 - Graduate Fellowship (Fall 2016)
 - **The Chinese University of Hong Kong** **Hong Kong**
2012–2013
 - *M.Sc. in Computer Science*
 - Distinguished Academic Performance Scholarship
 - **Hong Kong Baptist University** **Zhuhai, China**
2008–2012
 - *B.Sc. in Computer Science and Technology*
 - United International College
 - Second class Scholarship (2012)
 - Second Class Division One Honours
 - Top 3 student in the department

Research

- **Automated Essay Scoring System (on-going):** *Sep 2016–Dec 2020 | Pittsburgh, PA*
 - Worked with **Prof. Diane Litman**
 - An automated essay scoring system for upper elementary students.
 - Used NLP and Machine Learning techniques to predict essay scores on a noisy corpus from young students.
 - Combined word embedding model with the existing model to improve performance.
 - Investigated an approach for formative feedback generation.
 - Used a neural network approach for score predictions.
 - Worked on automated vital phases extraction.
- **TDR Social Network Model:** *Jan 2016–Dec 2016 | Pittsburgh, PA*
 - Worked with **Prof. Shi-Kuo Chang**
 - Predict meditation status from photoplethysmogram (PPG) signals.
- **Hidden Database Sampling:** *Sep 2013–Dec 2014 | Zhuhai, China*
 - Worked with **Prof. Weifeng Su** while working in United International College.
 - Top-k hidden database sampling using weighted graph.

Publication Highlights

- **Haoran Zhang**, & Diane Litman (2020). Automated Topical Component Extraction Using Neural Network Attention Scores from Source-based Essay Scoring. *Proceedings of the 58th Annual Association for Computational Linguistics (ACL)*, pp. 8569-8584.
- Elaine Wang, Lindsay Clare Matsumura, Richard Correnti, Diane Litman, **Haoran Zhang**, Emily Howe, Ahmed Magooda, & Rafael Quintana (2020). eRevis (ing): Students' revision of text evidence use in an automated writing evaluation system. *Assessing Writing*, 100449.
- **H. Zhang**, A. Magooda, D. Litman, R. Correnti, E. Wang, L.C. Matsumura, E. Howe, & R. Quintana (2019). eRevise: Using Natural Language Processing to Provide Formative Feedback on Text Evidence Usage in Student Writing. *Proceedings Thirty-First Annual Conference on Innovative Applications of Artificial Intelligence (IAAI-19)*.
- Elaine Wang, Richard Correnti, Lindsay Clare Matsumura, Diane Litman, Emily Howe, Rafael Quintana, **Colin Zhang**, & Ahmed Ezzat Magooda (2019). eRevise: Automated Formative Feedback System to Improve Students' Use of Text Evidence in Writing. *American Educational Research Association Annual Meeting (AERA)*.

- **Haoran Zhang, & Diane Litman** (2018). Co-Attention Based Neural Network for Source-Dependent Essay Scoring. *Proceedings of the Thirteenth Workshop on Innovative Use of NLP for Building Educational Applications (BEA)*, pp. 399-409.
- **Haoran Zhang, & Diane Litman** (2017). Word embedding for response-to-text assessment of evidence. *Proceedings of the 55th Annual Association for Computational Linguistics (Student Research Workshop)*, pp. 75-81.

Working Experiences

- **Facebook** **Menlo Park, CA**
Research Scientist *Dec 2020–Present*
 - Working on automated recommendation and ranking system.
 - Training machine learning model for better content recommendation for users.
- **University of Pittsburgh** **Pittsburgh, PA**
Graduate Research Assistant *Aug 2017–Nov 2020*
 - Worked on an Automated Essay Scoring Project.
 - Used attention-based neural model for essay score prediction.
 - Selected formative feedback automatically which helps students to revise their drafts.
- **Facebook** **Menlo Park, CA**
Software Engineering Intern *May 2019–Aug 2019*
 - Worked on in-feed video recommendation model.
 - Pushed online metrics by introducing additional information to the current video representation.
- **Google X** **Mountain View, CA**
Machine Learning Residence (Intern) *May 2018–Aug 2018*
 - This project is confidential.
 - Created a file extraction system.
 - Developed an automated camera exposure control system using neural network model.
- **Tianjin Sante Electronics Co.,Ltd.** **Tianjin, China**
Software Engineering Intern *June 2016–Aug 2016*
 - Created a leaking melting steel detection project.
 - Use Open CV and C++.
 - Detect sparkling of melting steel in real time video frames and produce sound and visual alert.
 - Future works based on my work have been deployed on steel factories.
- **University of Pittsburgh** **Pittsburgh, PA**
Teaching Assistant *Aug 2015–Aug 2017*
 - Part-time teaching assistant of “Data Structure” and “Computer Organization and Assembly Language” courses.
- **United International College** **Zhuhai, China**
Teaching Assistant *Aug 2013–June 2015*
 - Worked in Computer Science and Technology department.
 - Full-time teaching assistant for 6 courses each semester.
- **Yuanguang Software Co.,Ltd.** **Zhuhai, China**
Software Engineering Intern *Feb 2012–May 2012*
 - Worked on an Enterprise Resource Planning projects.
 - Worked in Information Integrated Department.
 - Use Java, Struts2, and HTML
 - All code had been deployed on factories of China Southern Power Grid.

Skills

- **Languages:** Proficient in: Java, Python. Also experienced with: C++, C#, C, Matlab, HTML, PHP, JSP.
- **Frameworks:** Weka, NLTK, scikit-learn, Keras, PyTorch, TensorFlow, OpenCV, Struts, Hibernate, Hadoop, ROS.

Awards

- Graduate Fellowship (Fall 2016)
- Distinguished Academic Performance Scholarship (2012 - 2013)
- 2nd Class Scholarship (2011 - 2012)