Event Schedule

Sun, Jun 25, 2017

8:00am

Opening & Welcome Remarks by President Zongkai Yang of CCNU

🔗 8:30am - 9:00am, Jun 25
📍 Grand Ballroom, 3F

Speakers:

Dr. Zongkai Yang
President, Central China Normal University

9:00am

EDM Keynote by Ron Cole

🔗 9:00am - 10:00am, Jun 25
📍 Grand Ballroom, 3F

The evolution of virtual tutors, clinician, and companions: A 20-year perspective on conversational agents in real-world applications. The talk will present an overview of research projects initiated in 1997 and continue today in 2017, in which 3-D computer characters interact with children and adults with the aim of improving their language communication skills, educational achievement, and/or personal well-being. The talk examines how advances in human language and character animation technologies, and research leading to a deeper understanding of how to apply these technologies to optimize engagement and learning, led to positive experiences and learning outcomes similar to experienced teachers and clinicians, individuals from 5 to 80 years of age. The talk concludes with a consideration of how recent advances in machine learning algorithms, coupled with cloud-based delivery of automated assessment and instruction, delivered by virtual agents, can save teachers millions of hours of time annually, and provide EDM researchers with vast amounts of speech and language data that can be mined to improve students’ learning experiences and outcomes.

Speakers:

Ron Cole
President, Boulder Language Technologies

10:00am

Coffee Break
EDM Session 1.1.1 Assessment - 1
10:30am - 12:00pm, Jun 25
Break Out 1
Session Chair: Collin Lynch

4 Subsessions
- **(Short) Automated Assessment for Scientific Explanations in On-line Science Inquiry**
  10:30am - 10:50am, Jun 25
- **(Short) Evaluation of a Data-driven Feedback Algorithm for Open-ended Programming**
  10:50am - 11:10am, Jun 25
- **(Short) Modeling Classifiers for Virtual Internship Without Participant Data**
  11:10am - 11:30am, Jun 25
- **(Full) Analysis of problem-solving behavior in open-ended scientific-discovery game challenges**
  11:30am - 12:00pm, Jun 25

EDM Session 1.1.2 Affect and Engagement - 1
10:30am - 12:00pm, Jun 25
Break Out 2
Session Chair: Ma. Mercedes T. Rodrigo

4 Subsessions
- **(Short) Online Learning Persistence and Academic Achievement**
  10:30am - 10:50am, Jun 25
- **(Short) Making the Grade: How Passing a Course Affects Learner Engagement**
  10:50am - 11:10am, Jun 25
- **(Industry) Dropout Prediction in Home Care Training**
  11:10am - 11:30am, Jun 25
- **(JEDM) Modeling Wheel-spinning and Productive Persistence in Skill Builders**
  11:30am - 12:00pm, Jun 25

12:00pm
Lunch
12:00pm - 1:00pm, Jun 25
Lunch at the hotel. Covered by registration fee

1:00pm

EDM Poster and Demo Session - 1
1:00pm - 2:00pm, Jun 25

22 Subsessions

- (Poster) Modeling Network Dynamics of MOOC Discussion Interactions at Scale
  1:00pm - 2:00pm, Jun 25

- (Poster) Studying MOOC Completion at Scale Using the MOOC Replication Framework
  1:00pm - 2:00pm, Jun 25

- (Poster) Clustering Students in ASSISTments: Exploring System- and School-Level Traits to Advance Personalization
  1:00pm - 2:00pm, Jun 25

- (Poster) Application of the Dynamic Time Warping Distance for the Student Drop-out Prediction on Time Series Data
  1:00pm - 2:00pm, Jun 25

- (Poster) Student Use of Scaffolded Inquiry Simulations in Middle School Science
  1:00pm - 2:00pm, Jun 25

- (Poster) Modeling Dormitory Occupancy Using Markov Chains
  1:00pm - 2:00pm, Jun 25

- (Poster) Improving Models of Peer Grading in SPOC
  1:00pm - 2:00pm, Jun 25

- (Poster) Personalized Feedback for Open-Response Mathematical Questions using Long Short-Term Memory Networks
  1:00pm - 2:00pm, Jun 25

- (Poster) Intelligent Composition of Test Papers based on MOOC Learning Data
  1:00pm - 2:00pm, Jun 25

  1:00pm - 2:00pm, Jun 25

- (Poster) A Prediction and Early Alert Model Using Learning Management System Data and Grounded in Learning Science Theory
  1:00pm - 2:00pm, Jun 25

- (Poster) Cluster Analysis of Real Time Location Data - An Application of Gaussian Mixture Models
  1:00pm - 2:00pm, Jun 25
(Poster) A Topic Model and Social Network Analysis of a School Blogging Platform  
1:00pm - 2:00pm, Jun 25

(Poster) Untangling The Program Name Versus The Curriculum: An Investigation of Titles and Curriculum Content  
1:00pm - 2:00pm, Jun 25

(Poster) Emerging Patterns in Student’s Learning Attributes through Text Mining  
1:00pm - 2:00pm, Jun 25

(Poster) A Neural Network Approach to Estimate Student Skill Mastery in Cognitive Diagnostic Assessments  
1:00pm - 2:00pm, Jun 25

(Poster) Automatic Peer Tutor Matching: Data-Driven Methods to Enable New Opportunities for Help  
1:00pm - 2:00pm, Jun 25

(Poster) Short-Answer Responses to STEM Exercises: Measuring Response Validity and Its Impact on Learning  
1:00pm - 2:00pm, Jun 25

(Poster) Using an Additive Factor Model and Performance Factor Analysis to Assess Learning Gains in a Tutoring System to Help Adults with Reading Difficulties  
1:00pm - 2:00pm, Jun 25

(Poster) An Analysis of Students’ Questions in MOOCs Forums  
1:00pm - 2:00pm, Jun 25

(Demo) Whitebox: A Device To Assist Group Work Evaluation  
1:00pm - 2:00pm, Jun 25

(Demo) Understanding Student's Reviewing and Reflection Behaviors Using Web-based Programming Grading Assistant  
1:00pm - 2:00pm, Jun 25

2:00pm

EDM Session 1.2.1 Educational Resources - 1  
2:00pm - 3:40pm, Jun 25

Break Out 1

Session chair: Sharon Hsiao

4 Subsessions

(Full) Measuring Similarity of Educational Items Using Data on Learners’ Performance  
2:00pm - 2:30pm, Jun 25

(Full) Toward the Automatic Labeling of Course Questions for Ensuring their Alignment with Learning Outcomes
2:00pm - 2:30pm, Jun 25
- **(Full)** Grade Prediction with Temporal Course-wise Influence
  - 2:30pm - 3:00pm, Jun 25

2:30pm - 3:00pm, Jun 25
- **(Short)** A Latent Factor Model For Instructor Content Preference Analysis
  - 3:00pm - 3:20pm, Jun 25

3:00pm - 3:20pm, Jun 25
- **(Short)** Development of a Trajectory Model for Visualizing Teacher ICT Usage Based on Event Segmentation Data
  - 3:20pm - 3:40pm, Jun 25

3:20pm - 3:40pm, Jun 25
- **(JEDM)** Modeling MOOC Student Behavior With Two-Layer Hidden Markov Models
  - 2:00pm - 3:20pm, Jun 25

3:00pm - 3:20pm, Jun 25
- **(Short)** Can Typical Behaviors Identified in MOOCs be Discovered in Other Courses?
  - 3:00pm - 3:20pm, Jun 25

3:20pm - 3:40pm, Jun 25
- **(Short)** On the Prevalence of Multiple-Account Cheating in Massive Open Online Learning
  - 3:20pm - 3:40pm, Jun 25

3:00pm
- Coffee Break
  - 3:40pm - 4:10pm, Jun 25

4:00pm
- EDM Session 1.3.1 Collaborative Learning 1
  - 4:10pm - 5:50pm, Jun 25

4:10pm - 5:50pm, Jun 25
- Break Out 1
  - Session chair: François Bouchet

4 Subsessions
- **(JEDM)** RiPLE: Recommendation in Peer-Learning Environments Based on Knowledge Gaps and Interests
4:10pm - 4:40pm, Jun 25

(Full) Epistemic Network Analysis and Topic Modeling for Chat Data from Collaborative Learning Environment
4:40pm - 5:10pm, Jun 25

(Short) Predicting Prospective Peer Helpers to Provide Just-In-Time Help to Users in Question and Answer Forums
5:10pm - 5:30pm, Jun 25

(Short) A General Model and Algorithm for Grouping Students for Maximizing Learning from Peers
5:30pm - 5:50pm, Jun 25

EDM Session 1.3.2 Assessment - 2
4:10pm - 5:50pm, Jun 25
Break Out 2
Session chair: Andrew Olney

4 Subsessions

(Full) Assessing Computer Literacy of Adults with Low Literacy Skills
4:10pm - 4:40pm, Jun 25

(Full) Predicting Short- and Long-Term Vocabulary Learning via Semantic Features of Partial Word Knowledge
4:40pm - 5:10pm, Jun 25

(Short) Combining Machine Learning and Natural Language Processing Approach to Assess Literary Text Comprehension
5:10pm - 5:30pm, Jun 25

(Short) Assessing the Dialogic Properties of Classroom Discourse: Proportion Models for Imbalanced Classes
5:30pm - 5:50pm, Jun 25

7:00pm

Dinner
7:00pm - 8:00pm, Jun 25

8:00pm

Evening Tour of Wuhan
8:00pm - 11:00pm, Jun 25
 EDM Keynote by Jie Tang
9:00am - 10:00am, Jun 26
Grand Ballroom, 3F

Can AI help MOOCs? Massive open online courses (MOOCs) boomed in recent years and have attracted millions of users worldwide. It is not only transforming higher education but also provides fodder for scientific research. In this talk, I am going to first introduce the major MOOC platforms in China, for example, XuetangX.com, a similar platform to Coursera and edX, is offering thousands of courses to more than 7,000,000 registered users. I will also introduce how we leverage AI technologies to help enhance student engagement on MOOCs.

Speakers:

Jie Tang
Professor, Tsinghua University

Coffee Break
10:00am - 10:30am, Jun 26

EDM Session 2.1.1 Doctoral Consortium 1
10:30am - 11:15am, Jun 26
Break Out 1

Session chair: Nigel Bosch

3 Subsessions

- (DC) Student Use of Inquiry Simulations in Middle School Science
  10:30am - 10:45am, Jun 26

- (DC) Automated Extraction of Results from Full Text Journal Articles
  10:45am - 11:00am, Jun 26

- (DC) A Framework for the Estimation of Students' Programming Abilities
  11:00am - 11:15am, Jun 26
EDM Session 2.1.2 Doctoral Consortium - 2
- 10:30am - 11:15pm, Jun 26
- Break Out 2

Session chair: Beate Grawemeyer

3 Subsessions

- (DC) Teaching Informal Logical Fallacy Identification with a Cognitive Tutor
  - 10:30am - 10:45am, Jun 26

- (DC) Intelligent Argument Grading System for Student-produced Argument Diagrams
  - 10:45am - 11:00am, Jun 26

- (DC) Developing Chinese Automated Essay Scoring Model to Assess College Students’ Essay Quality
  - 11:00am - 11:15am, Jun 26

11:00am

EDM Session 2.2.1 Collaborative Learning - 2
- 11:20am - 12:00pm, Jun 26

Session chair: Nigel Bosch

2 Subsessions

- (Short) Characterizing Collaboration in the Pair Program Tracing and Debugging Eye-Tracking Experiment
  - 11:20am - 11:40am, Jun 26

- (Short) Using Temporal Association Rule Mining to Predict Dyadic Rapport in Peer Tutoring
  - 11:40am - 12:00pm, Jun 26

EDM Session 2.2.2 Knowledge Tracing - 1
- 11:20am - 12:00pm, Jun 26

Session chair: Beate Grawemeyer

2 Subsessions

- (Short) Task and Timing: Separating Procedural and Tactical Knowledge in Student Models
  - 11:20am - 11:40am, Jun 26

- (Industry) Few hundred parameters outperform few hundred thousand?
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tr>
<td>11:40am - 12:00pm, Jun 26</td>
<td>On the Influence on Learning of Student Compliance with Prompts Fostering Self-Regulated Learning</td>
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<td>12:00pm</td>
<td>Lunch</td>
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<td>12:00pm - 1:00pm, Jun 26</td>
<td>Efficient Feature Embeddings for Student Classification with Variational Auto-encoders</td>
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<td>Industry Sponsors Panel</td>
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<td>1:00pm - 1:50pm, Jun 26</td>
<td>Break Out 1</td>
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<td>Speakers:</td>
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<td>Will Ma</td>
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<td>Co-founder &amp; Chief Data Scientist, Learnta Inc.</td>
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<td>2:00pm</td>
<td>EDM Session 2.3.1 Learner Behaviors - 2</td>
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<td>2:00pm - 3:40pm, Jun 26</td>
<td>Break Out 1</td>
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<td>Session chair: Agathe Merceron</td>
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<td>4 Subsessions</td>
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<td>(Full) On the Influence on Learning of Student Compliance with Prompts Fostering Self-Regulated Learning</td>
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<td>(Full) Efficient Feature Embeddings for Student Classification with Variational Auto-encoders</td>
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2:00pm - 2:30pm, Jun 26

- (Full) Generalizability of Face-Based Mind Wandering Detection Across Task Contexts
  - 2:00pm - 2:30pm, Jun 26

3:00pm - 3:40pm, Jun 26

- (Full) Addressing Student Behavior and Affect with Empathy and Growth Mindset
  - 2:00pm - 2:30pm, Jun 26

- (Short) Learner Affect Through the Looking Glass: Characterization and Detection of Confusion in Online Courses
  - 3:00pm - 3:20pm, Jun 26

- (Short) Gaze-based Detection of Mind Wandering during Lecture Viewing
  - 3:20pm - 3:40pm, Jun 26

3:00pm

Coffee Break
- 3:40pm - 4:10pm, Jun 26

4:00pm

EDM Session 2.4.1 Educational Resources - 2
- 4:10pm - 5:50pm, Jun 26

5 Subsessions

- (Short) An Effective Framework for Automatically Generating and Ranking Topics in MOOC Videos
4:10pm - 4:30pm, Jun 26
(Short) Inferring Frequently Asked Questions from Student Question Answering Forums
4:30pm - 4:50pm, Jun 26
(Short) Mining Innovative Augmented Graph Grammars for Argument Diagrams through Novelty Selection
4:50pm - 5:10pm, Jun 26
(Short) D.TRUMP: Data-mining Textual Responses to Uncover Misconception Patterns
5:10pm - 5:30pm, Jun 26
(Industry) Tell Me More: Digital Eyes to the Physical World for Early Childhood Learning
5:30pm - 5:50pm, Jun 26

EDM Session 2.4.2 Affect and Engagement - 3
4:10pm - 5:50pm, Jun 26
* Break Out 2

Session chair: Ryan Baker

3 Subsessions

(Full) Zone out no more: Mitigating mind wandering during computerized reading
4:10pm - 4:40pm, Jun 26

(Full) Behavior-Based Latent Variable Model for Learner Engagement
4:40pm - 5:10pm, Jun 26

(Short) Predicting Student Retention from Behavior in an Online Orientation Course
5:10pm - 5:30pm, Jun 26

7:00pm

Banquet
7:00pm - 9:00pm, Jun 26

Tue, Jun 27, 2017
9:00am

Panel - Ethical and Policy Issues in Educational Data Mining
9:00am - 10:00am, Jun 27
Grand Ballroom, 3F

Speakers:
(JEDM) Closing the loop: Automated data-driven cognitive model discoveries lead to improved instruction and learning gains
10:30am - 11:00am, Jun 27

(Short) Linking Language to Math Success in a Blended Course
11:00am - 11:20am, Jun 27

(Short) Convolutional Neural network for Automatic Detection of Students Sociomoral Reasoning Level
11:20am - 11:40am, Jun 27
(Industry) Adaptive Assessment Experiment in a HarvardX MOOC
11:40am - 12:00pm, Jun 27

EDM Session 3.1.2 Learner Behaviors - 3
10:30am - 12:00pm, Jun 27
Break Out 2
Session chair: Bradford Mott

4 Subsessions

(Full) The Antecedents of and Associations with Elective Replay in An Educational Game: Is Replay Worth It?
10:30am - 11:00am, Jun 27

(Short) Sequence Modelling For Analysing Student Interaction with Educational Systems
11:00am - 11:20am, Jun 27

(Short) Clustering Student Sequential Trajectories Using Dynamic Time Wrapping
11:20am - 11:40am, Jun 27

(Industry) Student Learning Strategies to Predict Success in an Online Adaptive Mathematics Tutoring System
11:40am - 12:00pm, Jun 27

12:00pm

Lunch
12:00pm - 1:00pm, Jun 27
Lunch at the hotel. Covered by registration fee

1:00pm

EDM Poster and Demo Session - 2
1:00pm - 2:00pm, Jun 27

20 Subsessions

(Poster) Modeling the Zone of Proximal Development with a Computational Approach
1:00pm - 2:00pm, Jun 27

(Poster) Supporting the Encouragement of Forum Participation
1:00pm - 2:00pm, Jun 27
(Poster) Automatic Scoring Method for Descriptive Test Using Recurrent Neural Network
1:00pm - 2:00pm, Jun 27

(Poster) Using Graph-based Modelling to explore changes in students' affective states during exploratory learning tasks
1:00pm - 2:00pm, Jun 27

(Poster) Predicting Performance in a Small Private Online Course
1:00pm - 2:00pm, Jun 27

(Poster) Social work in classroom? A tool to evaluate topic relevance of student writings
1:00pm - 2:00pm, Jun 27

(Poster) Causal Forest vs. Naive Causal Forest in Detecting Personalization: An Empirical Study in ASSISTments
1:00pm - 2:00pm, Jun 27

(Poster) An Offline Individual Treatment Rule Evaluation Method and How to Find Heterogeneous Treatment Effect
1:00pm - 2:00pm, Jun 27

(Poster) Enhancing Teaching and Learning by mita
1:00pm - 2:00pm, Jun 27

(Poster) Towards Automatic Classification of Learning Objects: Reducing the Number of Used Features
1:00pm - 2:00pm, Jun 27

(Poster) The Reading Ability of College Freshmen
1:00pm - 2:00pm, Jun 27

(Poster) Discovering skill prerequisite structure through Bayesian estimation and nested model comparison
1:00pm - 2:00pm, Jun 27

(Poster) Text analysis with LIWC and Coh-Metrix: Portraying MOOCs Instructors
1:00pm - 2:00pm, Jun 27

(Poster) Identifying relationships between students' questions type and their behavior
1:00pm - 2:00pm, Jun 27

(Poster) Metacognitive Prompt Overdose: Positive and Negative Effects of Prompts in iSTART
1:00pm - 2:00pm, Jun 27

(Poster) Tracking Online Reading of College Students
1:00pm - 2:00pm, Jun 27

(Poster) Dropout Prediction in MOOCs using Learners’ Study Habits Features
1:00pm - 2:00pm, Jun 27

(Poster) Exploring the Relationship Between Student Pre-knowledge and Engagement in MOOC Class Using Polytomous IRT
1:00pm - 2:00pm, Jun 27
(Poster) Identifying student communities in blended courses
1:00pm - 2:00pm, Jun 27

(Demo) Real-time programming exercise feedback in MOOCs
1:00pm - 2:00pm, Jun 27

2:00pm

EDM Session 3.2.1 Knowledge Tracing - 2
2:00pm - 3:40pm, Jun 27
Break Out 1

Session chair: Phil Pavlik

4 Subsessions

(Full) Towards reliable and valid measurement of individualized student parameters
2:00pm - 2:30pm, Jun 27

(Full) The Misidentified Identifiability Problem of Bayesian Knowledge Tracing
2:30pm - 3:00pm, Jun 27

(JEDM, short) Identifiability of the Bayesian Knowledge Tracing Model
3:00pm - 3:20pm, Jun 27

(Short) Learning to Represent Student Knowledge on Programming Exercises Using Deep Learning
3:20pm - 3:40pm, Jun 27

EDM Session 3.2.2 Pedagogical Policies
2:00pm - 3:40pm, Jun 27
Break Out 2

Session chair: Noboru Matsuda

4 Subsessions

(Full) Towards Closing the Loop: Bridging Machine-induced Pedagogical Policies to Learning Theories
2:00pm - 2:30pm, Jun 27

(Full) Adaptive Sequential Recommendation for Discussion Forums on MOOCs using Context Trees
2:30pm - 3:00pm, Jun 27

(Short) Using a Single Model Trained across Multiple Experiments to Improve the Detection of Treatment Effects
3:00pm - 3:20pm, Jun 27
(Short) Estimating Individual Treatment Effect from Educational Studies with Residual Counterfactual Networks
3:20pm - 3:40pm, Jun 27

Coffee Break
3:40pm - 4:10pm, Jun 27

EDM Closing and International Educational Data Mining Society meeting
4:10pm - 5:10pm, Jun 27

Dinner
7:00pm - 8:00pm, Jun 27

Evening Tour of Wuhan
8:00pm - 11:00pm, Jun 27
Optional tour of wuhan, handled by tourist agency. Extra charge may apply. Information available later

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