

# Program

3rd July 2023

	101	102	103	201	202	203
09:00-12:40	<b>WS-02</b> <i>Towards the Future of AI-augmented Human Tutoring in Math Learning</i> Vincent Alevan, Richard Baraniuk, Emma Brunskill, Scott Crossley, Dora Demszky, Stephen Fancsali, Shivang Gupta,	<b>WS-06</b> <i>AI and Education. A view through the lens of human rights, democracy and the rule of law. Legal and organizational requirements</i> Christian M. Stracke, Wayne Holmes	<b>WS-11</b> <i>Intelligent Textbooks</i> Sergey Sosnovsky, Peter Brusilovsky, Andrew Lan	<b>TUT-03</b> <i>How to Open Science: Promoting Principles and Reproducibility Practices within the Artificial Intelligence in Education</i> Aaron Haim, Stacy T. Shaw, Neil T. Heffernan	<b>WS-08</b> <i>AI and Educational Policy: Bridging Research and Practice</i> Seiji Isotoni, Ig Ibert Bittencourt, Erin Walker	<b>TUT-02</b> <i>Educational Recommender Systems</i> Yong Zheng
13:20-17:00	Kenneth Koedinger, Chris Piech, Steve Ritter, Danielle R Thomas, Simon Woodhead, Wanli Xing			<b>TUT-04</b> <i>Designing, Building and Evaluating Intelligent Psychomotor AIED systems</i>  Olga C. Santos, Miguel Portaz, Alberto Casas-Ortiz, Jon Echeverria	<b>WS-09</b> <i>Automated assessment and guidance of project work</i> Victoria Abou- Khalil, Andrew Vargo, Rwitajit Majumdar, Michele Magno, Manu Kapur	<b>WS-10</b> <i>AI in Education. Coming of Age. The Community Voice.</i> Judy Kay, Wayne Holmes
Hitotsubashi Hall						
13:20-17:00	Welcome to newcomers to the AIED conference and early career researchers Chair: Vania Dimitrova					
Josui Kaikan Hall 2nd floor						
17:00-19:00	Welcome Reception *1 minute walk from conference venue					

# 4th July 2023

Track A: AI-assisted and Interactive Technologies in an Educational Context

Track B: Learning Contexts and Informal Learning, Models of Teaching and Learning & Online Learning Spaces

Track C: Equity and Inclusion, Ethics and AI & Explore Design, Use, and Evaluation of Human-AI Hybrid Systems for Learning Track D: Modelling and Representation

Track E: Evaluation

Track F: Innovative Applications

	201-203	101-103	Hitotsubashi Hall
11:00-12:00	<b>Main Track A-1</b> Chair: Gautam Biswas	<b>Main Track B-1</b> Chair: Neils Pinkwart	<b>Main Track C-1</b> Chair: Kazuyo Sakanoi
	<b>Investigating the Utility of Self-Explanation Through Translation Activities with a Code-Tracing Tutor</b> FULL Maia Caughey and Kasia Muldner	<b>The Development of Multivariable Causality Strategy: Instruction or Simulation First?</b> FULL Janan Saba, Manu Kapur and Ido Roll	<b>SmartPhone: Exploring Keyword Mnemonic with Auto-generated Verbal and Visual Cues</b> FULL Jaewook Lee and Andrew Lan
	<b>Go with the Flow: Personalized Task Sequencing improves Online Language Learning</b> FULL Nathalie Rzepka, Katharina Simbeck, Hans-Georg Müller and Niels Pinkwart	<b>Reducing the Cost: Cross-Prompt Pre-Finetuning for Short Answer Scoring</b> FULL Hiroaki Funayama, Yuya Asazuma, Yuichiroh Matsubayashi, Tomoya Mizumoto and Kentaro Inui	<b>Help Seekers vs. Help FULLers: Understanding Student Engagement with a Mentor Agent</b> FULL Elena G. van Stee, Taylor Heath, Ryan S. Baker, J. M. Alexandra L. Andres and Jaclyn Ocumpaugh
	<b>Development of Virtual Reality SBIRT Skill Training with Conversational AI in Nursing Education</b> SHORT Jinsil Hwaryoung Seo, Rohan Chaudhury, Ja-Hun Oh, Caleb Kicklighter, Tomas Arguello, Elizabeth Wells-Beede and Cynthia Weston	<b>Multi-dimensional Learner Profiling by Modeling Irregular Multivariate Time Series with Self-supervised Deep Learning</b> SHORT Qian Xiao, Breanne Pitt, Keith Johnston and Vincent Wade	<b>Adoption of Adaptive Learning Platforms in Schools: Unveiling Factors Influencing Teachers' Engagement</b> FULL Mutlu Cukurova, Xin Miao and Richard J. Brooker
		<b>Examining the Benefits of Prompted Self-explanation for problem-solving in a Decimal Learning Game</b> SHORT Huy Nguyen, Xinying Hou, Hayden Stec, John Stamper and Bruce McLaren	
13:20-15:00	<b>Main Track A-2</b> Chair: Zachary Pardos	<b>Main Track B-2</b> Chair: Ruth Cobos	<b>Main Track C-2</b> Chair: Irene Chountle
	<b>Real-time AI-Driven Assessment &amp; Scaffolding that Improves Students' Mathematical Modeling during Science Inquiry</b> FULL Amy Adair, Ellie Segan, Janice Gobert and Michael Sao Pedro	<b>Trustworthy Academic Risk Prediction with Explainable Boosting Machines</b> FULL Vegenshanti Dsilva, Johannes Schleiss and Sebastian Stober	<b>Can Virtual Agents Scale Up Mentoring?: Insights from College Students' Experiences Using the CareerFair.ai Platform at an American Hispanic-Serving Institution</b> FULL Yuko Okado, Benjamin Nye, Angelica Aguirre and William Swartout
	<b>"Why my essay received a 4?": A Natural Language Processing Based Argumentative Essay Structure Analysis</b> FULL Bokai Yang, Sungjin Nam and Yuchi Huang	<b>Efficient Feedback and Partial Credit Grading for Proof Blocks Problems</b> FULL Seth Poulsen, Shubhang Kulkarni, Geoffrey L Herman and Matthew West	<b>Learning When to Defer to Humans for Short Answer Grading</b> FULL Zhaohui Li, Chengning Zhang, Yumi Jin, Xuesong Cang, Sadhana Puntambekar and Rebecca Passonneau
	<b>Enhancing Stealth Assessment in Collaborative Game-based Learning with Multi-task Learning</b> FULL Anisha Gupta, Dan Carpenter, Wookhee Min, Bradford Mott, Krista Glazewski, Cindy Hmelo-Silver and James Lester	<b>Confusion, Conflict, Consensus: Modeling Dialogue Processes during Collaborative Learning with Hidden Markov Models</b> FULL Toni V. Earle-Randell, Joseph B. Wiggins, Julianna Martinez Ruiz, Mehmet Celepkolu, Kristy Elizabeth Boyer, Collin F. Lynch, Maya Israel and Eric Wiebe	<b>A Spatiotemporal Analysis of Teacher Practices in Supporting Student Learning and Engagement in an AI-enabled Classroom</b> FULL Shamya Karumbaiah, Conrad Borchers, Tianze Shou, Ann-Christin Falhs, Cindy Liu, Tomohiro Nagashima, Nikol Rummel and Vincent Aleven
	<b>Prompt-independent Automated Scoring of L2 Oral Fluency by Capturing Prompt Effects</b> SHORT Ryuki Matsuura and Shungo Suzuki	<b>A Computational Model for the ICAP Framework: Exploring Agent-Based Modeling as an AIED Methodology</b> SHORT Sina Rismanchian and Shayan Doroudi	<b>Dropout Prediction in a Web Environment based on Universal Design for Learning</b> FULL Marvin Roski, Ratan Sebastian, Ralph Ewerth, Anett Hoppe and Andreas Nehring

	<p><b>C<sup>2</sup> Tutor: Helping People Learn to Avoid Present Bias During Decision Making</b> SHORT Calarina Muslimani, Saba Gul, Matthew E. Taylor, Carrie Demmans Epp and Christabel Wayllace</p>	<p><b>Predicting progress in a large-scale online programming course</b> SHORT Vincent Zhang, Irena Koprinska and Bryn Jeffries</p>	<p><b>Development and Experiment of Classroom Engagement Evaluation Mechanism during Real-Time Online Courses</b> FULL Yanyi Peng, Masato Kikuchi and Tadachika Ozono</p>
	<p><b>A Machine-Learning Approach to Recognizing Teaching Beliefs in Narrative Stories of Outstanding Professors</b> SHORT Fandel Lin, Ding-Ying Guo and Jer-Yann Lin</p>	<p><b>Examining the Impact of Flipped Learning for Developing Young Job Seekers' AI Literacy</b> SHORT Hyo-Jin Kim, Hyo-Jeong So and Young-Joo Suh</p>	
15:30-17:30	<p><b>Main Track A-3</b> Chair: Ido Roll</p>	<p><b>Main Track D-1</b> Chair: Carrie Demans</p>	<p><b>DC</b></p>
	<p><b>How Peers Communicate without Words-An Exploratory Study of Hand Movement in Collaborative Learning Using Computer-vision-based Body Recognition Techniques</b> FULL Qianru Lyu, Wenli Chen, Junzhu Su, Kok Hui John Gerard Heng and Shuai Liu</p>	<p><b>Content Matters: A Computational Investigation into the Effectiveness of Retrieval Practice and Worked Examples</b> FULL Napol Rachatasumrit, Paulo Carvalho and Kenneth Koedinger</p>	<p><b>Unsupervised concept tagging of mathematical questions from student explanations</b> FULL Shabana K M and Chandrashekar Lakshminarayanan</p>
	<p><b>Impact of Learning a Subgoal-directed Problem-solving Strategy in an Intelligent Logic Tutor</b> FULL Preya Shabrina, Behrooz Mostafavi, Min Chi and Tiffany Barnes</p>	<p><b>Robust Educational Dialogue Act Classifiers with Low-Resource and Imbalanced Datasets</b> FULL Jionghao Lin, Wei Tan, Ngoc Dang Nguyen and David Lang, Lan Due, Wray Buntine, Richard Beare, Guanliang Chen, and Dragan Gasevic</p>	<p><b>An Automated Approach to Assist Teachers in Recommending Groups of Students Associated with Collaborative Learning Techniques using Learning Paths in Virtual Learning Environments</b> FULL Ilmara M. M Ramos, David Ramos, Bruno Gadelha and Elaine H. T. Oliveira. Paths in Virtual Learning Environments</p>
	<p><b>Matching Exemplar as Next Sentence Prediction (MeNSP): Zero-shot Prompt Learning for Automatic Scoring in Science Education</b> FULL Xuansheng Wu, Xinyu He, Tianming Liu, Ninghao Liu and Xiaoming Zhai</p>	<p><b>The Road not Taken: Preempting Dropout in MOOCs</b> FULL Lele Sha, Ed Fincham, Lixiang Yan, Tongguang Li, Dragan Gasevic, Kobi Gal and Guanliang Chen</p>	<p><b>Structures in Online Discussion Forums: Promoting Inclusion or Exclusion?</b> FULL Kimberly Williamson and Rene Kizilcec.</p>
	<p><b>Designing for Student Understanding of Learning Analytics Algorithms</b> FULL Catherine Yeh, Noah Cowit and Iris Howley</p>	<p><b>Does Informativeness Matter? Active Learning for Educational Dialogue Act Classification</b> FULL Wei Tan, Jionghao Lin, David Lang, Guanliang Chen, Dragan Gasevic, Lan Du, and Wray Buntine</p>	<p><b>Assessment in Conversational Intelligent Tutoring Systems: Are contextual embeddings really better?</b> FULL Colin M. Carmon, Xiangen Hu and Arthur C. Graesser.</p>
	<p><b>Uncovering Ethical and Pedagogical Impacts on Students in the Adoption of Artificial Intelligence in Education</b> SHORT Bingyi Han, Sadia Nawaz, George Buchanan and Dana McKay</p>	<p><b>Does VR Offer Feedback in Education Games? Explore Feedback for Learning in Commercial Educational VR Games</b> FULL Yingan Chen, Judy Kay and Soojeong Yoo</p>	<p><b>A Recommendation System for Nurturing Students' Sense of Belonging</b> FULL Aileen Benedict, Sandra Wiktor, Mohammadali Fallahian, Mohsen Dorodchi, Filipe Dwan Pereira and David Gary.</p>
	<p><b>Affective Dynamic based technique for Facial Emotion Recognition (FER) to support Intelligent Tutor in Education</b> SHORT Xingran Ruan, Charaka Palansuriya and Aurora Constantin</p>	<p><b>A personalized learning path recommendation method for multi-granularity learning resources</b> SHORT Tengju Li, Xu Wang, Shugang Zhang, Fei Yang and Weigang Lu</p>	<p><b>Desirable Difficulties? The Effects of Spaced and Interleaved Practice in an Educational Game</b> FULL Jonathan Ben-David and Ido Roll.</p>
	<p><b>Real-time Hybrid Language Model for Fully Immersive Virtual Patient Conversations</b> SHORT Han Wei Ng, Aiden Tat Yang Koh, Anthea Foong and Jeremy Ong</p>	<p><b>Automated Program Repair Using Generative Models for Code Infilling</b> SHORT Charles Koutcheme, Sami Sarsa, Juho Leinonen, Arto Hellas and Paul Denny</p>	<p><b>Training Language Models for Programming Feedback Using Automated Repair Tools</b> SHORT Charles Koutcheme, Arto Hellas and Lassi Haaranen.</p>
	<p><b>Towards Enriched Controllability for Educational Question Generation</b> SHORT Bernardo Leite and Henrique Lopes Cardoso</p>		<p><b>Evaluating a conversational agent for second language learning aligned with the school curriculum</b> SHORT Elizabeth Bear and Xiaobin Chen.</p>

		<p><b><i>EngageMe: Assessing Student Engagement in Online Learning Environment Using Neuropsychological Tests</i></b>  SHORT  Saumya Yadav, Momin Naushad Siddiqui and Jainendra Shukla.</p>
		<p><b><i>Exploring the Effects of AI-generated Discussion Summaries on Learners' Engagement in Online Discussions</i></b>  SHORT  Xinyuan Hao and Mutlu Cukurova.</p>
		<p><b><i>Algebra Error Classification with Large Language Models</i></b>  FULL  Hunter McNichols, Mengxue Zhang and Andrew Lan.</p>
		<p><b><i>Building Educational Technology Quickly and Robustly with an Interactively Teachable AI</i></b>  FULL  Daniel Weitekamp.</p>
		<p><b><i>Investigating the impact of the mindset of the learners on their behavior in a computer-based learning environment</i></b>  FULL  Indrayani Nishane, Ramkumar Rajendran and Sridhar Iyer.</p>

## 5th July 2023

	201-203	101-103	Hitotsubashi Hall
10:30-12:00	<b>Main Track A-4</b> Chair: Roberto Martinez-Maldonado	<b>Main Track D-2</b>	<b>Main Track F-1</b>
	<b>Contrastive Learning For Reading Behavior Embedding in E-book System</b> FULL Tsubasa Minematsu, Yuta Taniguchi and Atsushi Shimada	<b>The Automated Model of Comprehension version 3.0: Paying Attention to Context</b> FULL Dragos Corlatescu, Micah Watanabe, Stefan Ruseti, Mihai Dascalu and Danielle McNamara	<b>Machine-Generated Questions Attract Instructors when Acquainted with Learning Objectives</b> FULL Machi Shimmei, Norman Bier and Noboru Matsuda
	<b>Gender Differences in Learning Game Preferences: Results Using a Multi-dimensional Gender Framework</b> FULL Huy Nguyen, Nicole Else-Quest, J. Elizabeth Richey, Jessica Hammer and Bruce McLaren	<b>Analysing Verbal Communication in Embodied Team Learning using Multimodal Data and Ordered Network Analysis</b> FULL Linxuan Zhao, Yuanru Tan, Dragan Gasevic, David Williamson Shaffer, Lixiang Yan, Xinyu Li and Roberto Martinez-Maldonado	<b>Automated hand-raising detection in classroom videos: A view-invariant and occlusion-robust machine learning approach</b> FULL Babette Bühler, Ruikun Hou, Efe Bozkir, Patricia Goldberg, Peter Gerjets, Ulrich Trautwein and Enkelejda Kasneci
	<b>Robust Team Communication Analytics with Transformer- Based Dialogue Modeling</b> FULL Jay Pande, Wookhee Min, Randall Spain, Jason D. Saville and James Lester	<b>Reflexive Expressions</b> FULL Andrew Gibson, Lance De Vine, Miguel Canizares and Jill Willis	<b>Improving Adaptive Learning Models using Prosodic Speech Features</b> FULL Thomas Wilschut, Florian Sense, Odette Scharenborg and Hedderik van Rijn
	<b>Measuring the Quality of Domain Models Extracted from Textbooks with Learning Curves Analysis</b> SHORT Isaac Alpizar Chacon, Sergey Sosnovsky and Peter Brusilovsky	<b>Generalizable Automatic Short Answer Scoring via Prototypical Neural Network</b> FULL Zijie Zeng, Lin Li, Quanlong Guan, Dragan Gašević and Guanliang Chen	<b>Leveraging Deep Reinforcement Learning for Metacognitive Interventions across Intelligent Tutoring Systems</b> FULL Mark Abdelshiheed, John Hostetter, Tiffany Barnes and Min Chi
	<b>Automatic Analysis of Student Drawings in Chemistry Classes</b> SHORT Markos Stamatakis, Wolfgang Gritz, Jos Oldag, Anett Hoppe, Sascha Schanze and Ralph Ewerth	<b>Eliciting Proactive and Reactive Control during Use of an Interactive Learning Environment</b> SHORT Deniz Sonmez Unal, Catherine Arrington, Erin Solovey and Erin Walker	<b>Balancing Test Accuracy and Security in Computerized Adaptive Testing</b> SHORT Wanyong Feng, Aritra Ghosh, Stephen Sireci and Andrew Lan
	<b>Training Language Models for Programming Feedback Using Automated Repair Tools</b> SHORT Charles Koutchme		
13:20-15:00	<b>Industry Track I</b> Chair: Diego Zapata-Rivera	<b>Practitioner Track I</b>	<b>Main Track F-2</b>
	<b>Leave No One Behind - A Massive Online Learning Platform Free For Everyone</b> FULL Alejandra Holguin Giraldo, Andrea Lozano Gutierrez, Gustavo Álvarez Leyton, Juan Camilo Sanguino and Rubén Francisco Manrique	<b>A Case Study on AIED Unplugged Applied to Public Policy for Learning Recovery</b> FULL Carlos Portela, Rodrigo Lisbôa, Edson Yasojima, Thiago Cordeiro, Alan Silva, Diego Dermeval, Leonardo Marques, Ig Bittencourt, Seiji Isotani and Rafael Mello	<b>Scalable Educational Question Generation with Pre-trained Language Models</b> FULL Sahan Bulathwela, Hamze Muse and Emine Yilmaz
	<b>Innovative Software to Efficiently Learn English through Extensive Reading and Personalized Vocabulary Acquisition</b> SHORT Yo Ehara	<b>Intelligence Augmentation in Early Childhood Education: A Multimodal Creative Inquiry Approach</b> FULL Ilene Berson, Michael Berson, Wenwei Luo and Huihua He	<b>Algebra Error Classification with Language Models</b> FULL Hunter McNichols, Mengxue Zhang and Andrew Lan
<b>A Student-Teacher Multimodal Interaction Analysis System for Classroom Observation</b> SHORT Jinglei Yu, Yu Lu and Zhihan Li	<b>Promoting Students' Pre-class Preparation in Flipped Classroom with Kit-build Concept Map</b> FULL Yusuke Hayashi, Yuta Aiwaka, Yuki Kawaguchi, Huazhe Sha, Mayumi Sugiura, Katsusuke Shigeta and Tsukasa Hirashima	<b>Automatic Educational Question Generation with Difficulty Level Controls</b> FULL Ying Jiao, Kumar Shridhar, Peng Cui, Wangchunshu Zhou and Mrinmaya Sachan	



	<p><b>Rewriting Math Word Problems to Improve Learning Outcomes for Emerging Readers: A Randomized Field Trial in Carnegie Learning's MATHia</b> SHORT Husni Almoubayyed, Rae Bastoni, Susan Berman, Sarah Galasso, Megan Jensen, Leila Lester, April Murphy, Mark Swartz, Kyle Weldon, Stephen Fancsali, Jess Gropen and Steve Ritter</p>	<p><b>"Learning Recorder" that Helps Lesson Study of Collaborative Learning</b> FULL Hajime Shirouzu, Moegi Saito, Shinya Iikubo and Kumiko Menda</p>	<p><b>Can You Solve This on the First Try? – Understanding Exercise Field Performance in an Intelligent Tutoring System</b> FULL Hannah Deininger, Rosa Lavelle- Hill, Cora Parrisius, Ines Pieronczyk, Leona Colling, Detmar Meurers, Ulrich Trautwein, Benjamin Nagengast and Gjergji Kasneci</p>
			<p><b>Navigating Wanderland: Highlighting Off-Task Discussions in Classrooms</b> SHORT Ananya Ganesh, Michael Chang, Rachel Dickler, Michael Regan, Jon Cai, Kristin Wright-Bettner, James Pustejovsky, James Martin, Jeff Flanigan, Martha Palmer and Katharina Kann</p>
			<p><b>Automatic Detection of Collaborative States in Small Groups Using Multimodal Features</b> SHORT Mariah Bradford, Ibrahim Khebour, Nathaniel Blanchard and Nikhil Krishnaswamy</p>
15:30-17:00	<p><b>Industry Track II</b> Chair: Zitao Liu</p>	<p><b>Practitioner Track II</b></p>	<p><b>Main Track E-1</b></p>
	<p><b>Industry and Innovation Panel</b> PANEL</p>	<p><b>Enabling individualized and adaptive learning – The value of an AI-based recommender system for users of adult and continuing education platforms</b> FULL Sabine Digel, Thorsten Krause and Carmen Biel</p>	<p><b>Implementing and Evaluating ASSISTments Online Math Homework Support At large Scale over Two Years: Findings and Lessons Learned</b> FULL Mingyu Feng, Neil Heffernan, Kelly Collins, Cristina Heffernan and Robert Murphy</p>
		<p><b>"Learning Note" that Helps Teachers' Lesson Study Across Time and Space</b> FULL Shinya Iikubo, Hajime Shirouzu, Moegi Saito and Hideko Hagiwara</p>	<p><b>What and how you explain matters: Inquisitive Teachable Agent Scaffolds Knowledge- building for Tutor Learning</b> FULL Tasmia Shahriar and Noboru Matsuda</p>
		<p><b>How can A/B testing at scale accelerate learning outcomes in low and middle income environments?</b> FULL Aidan Friedberg</p> <p><b>AIED Unplugged: Leapfrogging the Digital Divide to Reach the Underserved</b> FULL Seiji Isotani, Ig Bittencourt, Geiser Chalco, Diego Dermeval and Rafael Mello</p>	<p><b>Improving Automated Evaluation of Student Text Responses using GPT-3 for Text Data Augmentation</b> FULL Keith Cochran, Clayton Cohn, Peter Hastings and Jean-François Rouet</p> <p><b>Plug-and-Play EEG-based Student Confusion Classification in Massive Online Open Courses</b> SHORT Han Wei Ng</p>
		<p><b>How can A/B testing at scale accelerate learning outcomes in low and middle income environments?</b> FULL Aidan Friedberg</p>	<p><b>CPSCoach: The Design and Implementation of Intelligent Collaborative Problem Solving Feedback</b> SHORT Angela Stewart, Arjun Rao, Amanda Michaels, Chen Sun, Valerie Shute, Nicholas Duran and Sidney D'Mello</p>
			<p><b>BETTER: An automatic feedback system for supporting emotional speech training</b> SHORT Adam Wynn and Jingyun Wang</p>
	Rihga Royal Hotel Tokyo 3rd floor		
18:30-20:30	Banquet *25 minutes by subway and walk. Conference bus is available for overseas participants.		

## 6th July 2023

	201-203	101-103	Hitotsubashi Hall
10:30-12:00	<b>Journal Track I</b> Chair: Bruce McLaren	<b>Main Track D-3</b>	<b>BlueSky track and Panel</b> Chair: Genaro Rebolledo-Mendez
	<b>Interpreting Deep Learning Models for Knowledge Tracing.</b> Lu, Y., Wang, D., Chen, P. et al.	<b>Getting the wiggles out: Movement between tasks predicts future mind wandering during learning activities</b> FULL Rosy Southwell, Candace Peacock and Sidney D'Mello	<b>Computational Models of Learning: Deepening Care and Carefulness in AI in Education</b> FULL Daniel Weitekamp and Kenneth Koedinger
	<b>Teaching How to Teach Promotes Learning by Teaching.</b> Matsuda, N., Lv, D. & Zheng, G.	<b>Physiological Synchrony and Arousal as Indicators of Stress and Learning Performance in Embodied Collaborative Learning</b> FULL Lixiang Yan, Roberto Martinez- Maldonado, Linxuan Zhao, Xinyu Li and Dragan Gasevic	<b>Four Interactions Between AI and Education: Broadening Our Perspective on What AI Can Offer Education</b> FULL Sina Rismanchian and Shayan Doroudi
	<b>A Step-Based Tutoring System to Teach Underachieving Students How to Construct Algebraic Models.</b> VanLehn, K., Milner, F., Banerjee, C. et al.	<b>Unsupervised concept tagging of mathematical questions from student explanations</b> FULL Shabana K M and Chandrashekar Lakshminarayanan	<b>Crowdsourcing Paves the Way for Personalized Learning</b> INVITED Ethan Prihar and Neil Heffernan
	<b>AI Curriculum for European High Schools: An Embedded Intelligence Approach.</b> Bellas, F., Guerreiro-Santalla, S., Naya, M. et al.	<b>Teacher Talk Moves in K12 Mathematics Lessons: Automatic Identification, Prediction Explanation, and Characteristic Exploration</b> FULL Deliang Wang, Dapeng Shan, Yaqian Zheng and Gaowei Chen	<b>AI-Empowered Open-Ended Learning Environments in STEM Domains</b> INVITED Gautam Biswas
	<b>Investigating the Relationship Between Dialogue States and Partner Satisfaction During Co- Creative Learning Tasks.</b> Griffith, A.E., Katuka, G.A., Wiggins, J.B. et al.		<b>AIED for the Developing World</b> INVITED Maria Mercedes T. Rodrigo
	<b>Can Multi-Label Classifiers Help Identify Subjectivity? A Deep Learning Approach to Classifying Cognitive Presence in MOOCs.</b> Hu, Y., Donald, C. & Giacaman, N.		<b>Intelligent Textbooks</b> INVITED Peter Leonid Brusilovsky and Sergey Sosnovsky
	<b>Using Automated Planning to Provide Feedback during Collaborative Problem-Solving.</b> Rojas, M., Sáez, C., Baier, J., Nussbaum, M., Guerrero, O., & Rodríguez, M. F.		<b>Intelligent Mentoring Systems: Tapping into AI to deliver the next generation of digital learning</b> INVITED Vania Dimitrova
13:20-15:00	<b>Journal Track II</b> Chair: Ivonne Arroyo	<b>Main Track E-2</b>	<b>IAALDE</b> Chair: Olga Santos
	<b>Integrating Ethics and Career Futures with Technical Learning to Promote AI Literacy for Middle School Students: An Exploratory Study.</b> Zhang, H., Lee, I., Ali, S. et al.	<b>Neural Automated Essay Scoring Considering Logical Structure</b> FULL Misato Yamaura, Itsuki Fukuda and Masaki Uto	
	<b>AI, Ethics Curricula for Middle School Youth: Lessons Learned from Three Project- Based Curricula.</b> Williams, R., Ali, S., Devasia, N. et al.	<b>Involving Teachers in the Data- driven Improvement of Intelligent Tutors: A Prototyping Study</b> FULL Meng Xia, Xinyi Zhao, Dong Sun, Yun Huang, Jonathan Sewall and Vincent Aleven	
	<b>Towards a Tutoring System to Support Robotics Activities in Classrooms ,i Two Wizard-of-Oz Studies.</b> Schulz, S., McLaren, B.M. & Pinkwart, N.	<b>Exploration of Annotation Strategies for Automatic Short Answer Grading</b> FULL Aner Egaña, Itziar Aldabe and Oier Lopez de Lacalle	
	<b>Automated Short Answer Scoring Using an Ensemble of Neural Networks and Latent Semantic Analysis Classifiers.</b> Ormerod, C., Lottridge, S., Harris, A.E. et al.	<b>A Multi-Theoretic Analysis of Collaborative Discourse: A Step Towards AI-Facilitated Student Collaborations</b> FULL Jason Reitman, Peter Foltz, Charis Clevenger, Quinton Beck-White, Amanda Howard, Sierra Rose, Jacob Elick, Julianna Harris and Sidney D'Mello	

	<p><b>Supporting College Choice Among International Students through Collaborative Filtering.</b> Tenison, C., Ling, G. &amp; McCulla, L.</p>	<p><b>How to Repeat Hints: Improving the Effectiveness of AI-driven Help in Open-Ended Learning Environments</b> SHORT Sébastien Lallé, Özge Nilay Yalçın and Cristina Conati</p>	
	<p><b>Three Algorithms for Grouping Students: A Bridge Between Personalized Tutoring System Data and Classroom Pedagogy.</b> Lechuqa, C.G., Doroudi, S.</p>		
	<p><b>The Intertwined Histories of Artificial Intelligence and Education.</b> Doroudi, S.</p>		
	<p><b>The Impact of Batch Deep Reinforcement Learning on Student Performance: A Simple Act of Explanation Can Go A Long Way.</b> Sanz Ausin, M., Maniktala, M., Barnes, T. et al.</p>		
	Hitotsubashi Hall		
15:30-16:40	Town Hall Meeting (IAIED society general assembly)		



# 7th July 2023

	101	102	103	201	202	203
09:00-12:40	<b>WS-03</b> <i>Empowering Education with LLMs: the Next-Gen Interface and Content Generation</i> Steven Moore, Richard Tong, Zitao Liu, Xiangen Hu, Yu Lu, Joleen Liang, Hassan Khosravi, Paul Denny, Anjali Singh, Chris Brooks, John Stamper, Chen Cao	<b>WS-07</b> <i>Equity, Diversity, and Inclusion in Educational Technology Research and Development</i> Adele Smolansky, Huy Nguyen, Rene Kizilcec, Bruce M. McLaren	<b>WS-12</b> <i>AI to Support Guided Experiential Learning</i> Benjamin Goldberg, Robby Robson	<b>WS-05</b> <i>The Role of Artificial Intelligence in the Education System of Developing Countries in Asia</i> May Marie Talandron-Felipe, Bo Jiang, Mas Nida Md. Khambari, Christine Lourrine Tablatin, Priscilla Moses, Jenilyn Agapito	<b>TUT-01</b> <i>Conducting Rapid Experimentation with an Open-source Adaptive Tutoring System</i> Zachary A. Pardos, Ioannis Anastasopoulos, Shreya Sheel	<b>WS-04</b> <i>AI Education in K-12</i> David Pynadath, David Pynadath, Jessica Vandenberg, Maya Israel, Satabdi Basu, Shiyang Jiang, James Lester, Ning Wang
13:20-17:00				<b>WS-01</b> <i>Artificial Intelligence in Education in Africa</i> George Boateng		
Hitotsubashi Hall						
09:00-10:40	<b>Wide AIED track I</b> Chair: Didith Rodrigo					
	<b>Automated Essay Scoring Incorporating Multi-level Semantic Features</b> Jianwei Li and Jiahui Wu					
	<b>Improve the Item Selection Process with Reinforcement Learning in Computerized Adaptive Testing</b> Yang Pian, Penghe Chen and Guangchen Song					
	<b>Quantifying Re-Engagement in Minecraft</b> Jonathan Casano, Mikael Fuentes and Maria Mercedes Rodrigo					
	<b>Teamwork Dimensions Classification Using BERT</b> Junyoung Lee and Elizabeth Koh					
	<b>Desirable Difficulties? The Effects of Spaced and Interleaved Practice in an Educational Game</b> Jonathan Ben-David and Ido Roll					
	<b>GPTutor: a ChatGPT-powered programming tool for code explanation</b> Eason Chen, Ray Huang, Han-Shin Chen, Yuen-Hsien Tseng and Liang-Yi Li					
	<b>The Good and Bad of Stereotype Threats: Understanding Its Effects on Negative Thinking and Learning Performance in Gamified Tutoring Systems.</b> Jessica Fernanda Silva Barbosa, Geiser Chalco Chalco, Francys Rafael Do Nascimento Martins, Breno Felix de Sousa, Ig Ibert Bittencourt, Marcelo Reis, Jário Santos and Seiji Isotani					
	<b>Practice of Tutoring Support System Based on Impasse Detection for Face-to-Face and On-demand Programming Exercises</b> Yasuhiro Noguchi, Tomoaki Ikegame, Satoru Kogure, Koichi Yamashita, Raiya Yamamoto and Tatsuhiro Konishi					
	<b>Automatic Slide Generation Using Discourse Relations</b> Teppei Kawanishi and Hiroaki Kawashima					
	<b>Gamiflow: A Flow Theory-Based Gamification Framework for Learning Scenarios</b> Geiser Chalco Chalco, Ig Ibert Bittencourt, Marcelo Reis, Jário Santos and Seiji Isotani					
	<b>Learning from AI: An Interactive Learning Method Using a DNN Model Incorporating Expert Knowledge as a Teacher</b> Kohei Hattori, Hironobu Fujiyoshi, Takayoshi Yamashita and Tsubasa Hirakawa					
11:00-12:40	<b>Wide AIED track II</b> Chair: Didith Rodrigo					
	<b>Automatic Multi-label Educational Dialog Act Annotating with Data Augmentation in Online One-on-one Task-based Tutoring Dialog</b> Dapeng Shan, Deliang Wang, Chenwei Zhang, Ben Kao and Carol K.K. Chan					
	<b>A Support System to Help Teachers Design Course Plans Conforming to National Curriculum Guidelines</b> Yo Ehara					
	<b>Predicting Student Scores Using Browsing Data and Content Information of Learning Materials</b> Sayaka Kogishi, Tsubasa Minematsu, Atsushi Shimada and Hiroaki Kawashima					

	<p><b>Preserving Privacy of Face and Facial Expression in Computer Vision Data Collected in Learning Environments</b> Ashwin T S and Ramkumar Rajendran</p>
	<p><b>Item difficulty constrained uniform adaptive testing</b> Wakaba Kishida, Kazuma Fuchimoto, Yoshimitsu Miyazawa and Maomi Ueno</p>
	<p><b>Q-GENius: A GPT based modified MCQ generator for identifying learner deficiency</b> Vijay Prakash, Kartikay Agrawal and Syaamantak Das</p>
	<p><b>A Software Platform for Evaluating Student Essays in Interdisciplinary Learning with Topic Classification Techniques</b> Bryan Cheng Yee Lim, Chenyu Hou, Gaoxia Zhu, Fun Siong Lim, Shengfei Lyu and Xiuyi Fan</p>
	<p><b>Automated Scoring of Logical Consistency of Japanese Essays</b> Sayaka Nakamoto and Kazutaka Shimada</p>
	<p><b>Conversational AI and Social Justice: Applying Critical Digital Pedagogy to Promote Greater Equity in Education</b> Jim Wagstaff</p>
	<p><b>Using Similarity Learning with SBERT to Optimize Teacher Report Embeddings for Student Performance Prediction</b> Menna Fateen and Tsunenori Mine</p>
	<p><b>Question Classification with Constrained Resources: A Study with Coding Exercises</b> Luiz Rodrigues, Filipe Pereira, Jario Santos, Elaine Oliveira, Isabela Gasparini, Rafael Mello, Leonardo Marques, Diego Dermeval, Ig Bittencourt and Seiji Isotani</p>
	<p><b>Even boosting stereotypes increase the gender gap in gamified tutoring systems: an analysis of self- efficacy, flow and learning</b> Maria Takeshita, Geiser Chalco Chalco, Marcelo Reis, Jário Santos, Seiji Isotani and Ig Ibert Bittencourt</p>
	Hitotsubashi Hall
17:00-17:30	Closing Ceremony

# Posters

4th July 2023

Title	Authors
<b>Automated Essay Scoring Incorporating Multi-level Semantic Features</b>	Jianwei Li and Jiahui Wu
<b>Using Decomposed Prompting to Answer Student Questions on a Course Discussion Board</b>	Brandon Jaipersaud, Lisa Zhang, Andrew Petersen, Paul Zhang, Michael Zhang and Jimmy Ba
<b>Teamwork Dimensions Classification Using BERT</b>	Junyoung Lee and Elizabeth Koh
<b>Data augmentation with GAN to improve the prediction of at-risk students in a virtual learning environment</b>	Tomislav Volaric, Hrvoje Ljubić, Marija Dominković, Goran Martinović and Robert Rozić
<b>Who and How: Using Sentence-level NLP to Evaluate Idea Completeness</b>	Martin Ruskov
<b>Practice of Tutoring Support System Based on Impasse Detection for Face-to-Face and On-demand Programming Exercises</b>	Yasuhiro Noguchi, Tomoaki Ikegame, Satoru Kogure, Koichi Yamashita, Raiya Yamamoto and Tatsuhiko Konishi
<b>Investigating Patterns of Tone and Sentiment in Teacher Written Feedback Messages</b>	Sami Baral, Anthony F. Botelho, Abhishek Santhanam, Ashish Gurung, John Erickson and Neil Heffernan
<b>Early Prediction of Student Performance in Online Programming Courses</b>	Enqi Liu, Irena Koprinska and Kalina Yacef
<b>Bayesian Analysis of Adolescent STEM Interest Using Minecraft</b>	Matthew Gadbury and H. Chad Lane
<b>Using large language models to develop readability formulas for educational settings</b>	Scott Crossley, Joon Suh Choi, Yanisa Scherber and Mathis Lucka
<b>Learning from AI: An Interactive Learning Method Using a DNN Model Incorporating Expert Knowledge as a Teacher</b>	Kohei Hattori, Hironobu Fujiyoshi, Takayoshi Yamashita and Tsubasa Hirakawa
<b>A SHAP-inspired method for computing interaction contribution in deep knowledge tracing</b>	Enrique Valero-Leal, May Kristine Jonson Carlon and Jeffrey S. Cross
<b>Analyzing Students' Interaction with Writing Feedback and Their Effects on Writing Performance</b>	Yang Jiang, Beata Beigman Klebanov, Oren E. Livne and Jiangang Hao
<b>Automatic Multi-label Educational Dialog Act Annotating with Data Augmentation in Online One-on-one Task-based Tutoring Dialog</b>	Dapeng Shan, Deliang Wang, Chenwei Zhang, Ben Kao and Carol K.K. Chan
<b>Using Transformer Language Models to Provide Formative Feedback in Intelligent Textbooks</b>	Wesley Morris, Scott Crossley, Langdon Holmes, Chaohua Ou, Danielle McNamara and Mihai Dascalu
<b>Utilizing Natural Language Processing for Automated Assessment of Classroom Discussion</b>	Nhat Tran, Benjamin Pierce, Diane Litman, Richard Correnti and Lindsay Clare Matsumura
<b>Ghost in the machine: AVATAR, a prototype for supporting student authorial voice</b>	Jasbir Karneil Singh, Ben Daniel and Joyce Hwee Ling Koh
<b>How Useful are Educational Questions Generated by Large Language Models?</b>	Sabina Elkins, Ekaterina Kochmar, Jackie Chi Kit Cheung and Iulian Vlad Serban
<b>Predicting Student Scores Using Browsing Data and Content Information of Learning Materials</b>	Sayaka Kogishi, Tsubasa Minematsu, Atsushi Shimada and Hiroaki Kawashima
<b>A Unified Batch Hierarchical Reinforcement Learning Framework for Pedagogical Policy Induction with Deep Bisimulation Metrics</b>	Markel Sanz Ausin, Mark Abdelshiheed, Tiffany Barnes and Min Chi
<b>Nuanced Growth Patterns of Students with Disability</b>	Sadia Nawaz, Toshiko Kamei and Namrata Srivastava
<b>Q-GENius: A GPT based modified MCQ generator for identifying learner deficiency</b>	Vijay Prakash, Kartikay Agrawal and Syaamantak Das
<b>A Software Platform for Evaluating Student Essays in Interdisciplinary Learning with Topic Classification Techniques</b>	Bryan Cheng Yee Lim, Chenyu Hou, Gaoxia Zhu, Fun Siong Lim, Shengfei Lyu and Xiuyi Fan
<b>Automated Scoring of Logical Consistency of Japanese Essays</b>	Sayaka Nakamoto and Kazutaka Shimada
<b>Exercise generation supporting adaptivity in Intelligent Tutoring Systems</b>	Tanja Heck and Detmar Meurers
<b>Context Matters: A Strategy to Pre-train Language Model for Science Education</b>	Zhengliang Liu, Xinyu He, Lei Liu, Tianming Liu and Xiaoming Zhai
<b>Automatic Assessment of Comprehension Strategies from Self-Explanations using Transformers and Multi-Task Learning</b>	Bogdan Nicula, Marilena Panaite, Arner Tracy, Renu Balyan, Mihai Dascalu and Danielle McNamara
<b>Deidentifying Student Writing with Rules and Transformers</b>	Langdon Holmes, Scott Crossley, Wesley Morris, Harshvardhan Sikka and Anne Trumbore
<b>Using Similarity Learning with SBERT to Optimize Teacher Report Embeddings for Student Performance Prediction</b>	Menna Fateen and Tsunenori Mine
<b>Question Classification with Constrained Resources: A Study with Coding Exercises</b>	Luiz Rodrigues, Filipe Pereira, Jario Santos, Elaine Oliveira, Isabela Gasparini, Rafael Mello, Leonardo Marques, Diego Dermeval, Ig Bittencourt and Seiji Isotani

5th July 2023

Title	Authors
<b>Promising Long Term Effects of ASSISTments Online Math Homework Support</b>	Mingyu Feng, Chunwei Huang and Kelly Collins
<b>Audio Classifier for Endangered Language Analysis and Education</b>	Meghna Reddy and Min Chen
<b>Learning from Auxiliary Sources in Argumentative Revision Classification</b>	Tazin Afrin and Diane Litman
<b>Exploring the effect of autoencoder based feature learning for a deep reinforcement learning policy to determine when to provide proactive help</b>	Nazia Alam, Behrooz Mostafavi, Min Chi and Tiffany Barnes
<b>Comparing Different Approaches to Generating Mathematics Explanations Using Large Language Models</b>	Ethan Prihar, Morgan Lee, Mia Hopman, Adam Kalai, Sofia Vempala, Allison Wang, Gabriel Wickline and Neil Heffernan
<b>Analyzing Response Times and Answer Feedbacks in an Adaptive Assessment</b>	Jeffrey Matayoshi, Hasan Uzun and Eric Cosyn
<b>Enhancing the Automatic Identification of Common Math Misconceptions Using Natural Language Processing</b>	Guher Gorgun and Anthony Botelho
<b>User Adaptive Language Learning Chatbots with a Curriculum</b>	Kun Qian, Ryan Shea, Yu Li, Luke K. Fryer and Zhou Yu
<b>Learning about circular motion of celestial bodies with interactive qualitative representations</b>	Marco Kragten and Bert Bredeweg
<b>GPTutor: a ChatGPT-powered programming tool for code explanation</b>	Eason Chen, Ray Huang, Han-Shin Chen, Yuen-Hsien Tseng and Liang-Yi Li
<b>The Good and Bad of Stereotype Threats: Understanding Its Effects on Negative Thinking and Learning Performance in Gamified Tutoring Systems.</b>	Jessica Fernanda Silva Barbosa, Geiser Chalco Chalco, Francys Rafael Do Nascimento Martins, Breno Felix de Sousa, Ig Ibert Bittencourt, Marcelo Reis, Jário Santos and Seiji Isotani
<b>Performance by Preferences – An Experiment in Language Learning to argue for Personalization</b>	Sylvio Rüdian and Niels Pinkwart
<b>Multimodal Task-Based Language Learning System with Personalization and Dynamic Adaptation</b>	Pravin Chopade, Shi Pu, Michelle LaMar and Christopher Kurzum
<b>Automatic Slide Generation Using Discourse Relations</b>	Teppei Kawanishi and Hiroaki Kawashima
<b>Warming up the Cold Start: Adaptive Step Size Method for the Urnings Algorithm</b>	Bence Gergely, Han L.J. van der Maas, Gunter Maris and Maria Bolsinova
<b>Modeling problem-solving strategy invention (PSSI) in an online math learning environment</b>	Nidhi Nasiar, Ryan Baker, Yishan Zou, Jiayi Zhang and Stephen Hutt
<b>Improving Comprehension of Program Examples through Automatic Assessment and Scaffolding of Self- Explanations</b>	Priti Oli, Rabin Banjade, Vasile Rus, Arun Balajee Lekshmi Narayanan, Jeevan Chapagain, Lasang Jimba Tamang and Peter Brusilovsky
<b>Evaluating Language Learning Apps for Behaviour Change Using the Behaviour Change Scale</b>	Ifeoma Adaji
<b>Generative AI for learning: Investigating the potential of synthetic learning videos</b>	Daniel Leiker, Ashley Ricker Gyllen, Ismail Eidesouky and Mutlu Cukurova
<b>Towards Extracting Adaptation Rules From Neural Networks</b>	Ange Tato and Roger Nkambou
<b>A Support System to Help Teachers Design Course Plans Conforming to National Curriculum Guidelines</b>	Yo Ehara
<b>"A Fresh Squeeze on Data": Exploring Gender Differences in Self-Efficacy and Career Interest in Computing Science and Artificial Intelligence among Elementary Students</b>	Shuhan Li, Roozbeh Aliabadi, Annabel Hasty and Eryka Wilson
<b>Predict Feedback Type from Student Interaction in the Pyrates Programming Serious Game</b>	Matthieu Branthôme and Sébastien Lallé
<b>Visualizing Self-Regulated Learner Profiles in Dashboards: Design Insights from Teachers</b>	Paola Mejia-Domenzain, Eva Laini, Seyed Parsa Neshaei, Thiemo Wambsganss and Tanja Käser
<b>Towards Automatic Tutoring of Custom Student-Stated Math Word Problems</b>	Pablo Arnau González, Ana Serrano Mamolar, Stamos Katsigiannis and Miguel Arevalillo Herráez
<b>Conversational AI and Social Justice: Applying Critical Digital Pedagogy to Promote Greater Equity in Education</b>	Jim Wagstaff
<b>Understanding the Impact of Reinforcement Learning Personalization on Subgroups of Students in Math Tutoring</b>	Allen Nie, Ann-Katrin Reuel and Emma Brunskill
<b>Ensuring Fairness of Human- and AI-generated Test Items</b>	William Belzak, Ben Naismith and Jill Burstein
<b>Is Off-the-shelf Machine Learning Based Natural Language Processing Ready for Prime Time?</b>	Danielle R Thomas, Shivang Gupta and Kenneth R. Koedinger
<b>Using simple text mining tools to power an intelligent learning system for lengthy, domain specific texts</b>	John Sabatini and John Hollander



6th July 2023

Title	Authors
<b>Consistency of Inquiry Strategies Across Subsequent Activities in Different Domains</b>	Jade Cock, Ido Roll and Tanja Käser
<b>Improve the Item Selection Process with Reinforcement Learning in Computerized Adaptive Testing</b>	Yang Pian, Penghe Chen and Guangchen Song
<b>The Role of Social Presence in MOOC Students' Behavioral Intentions and Sentiments Toward the Usage of a Learning Assistant Chatbot: A Diversity, Equity, and Inclusion Perspective Examination</b>	Songhee Han, Jiyeon Jung, Hyangeun Ji, Unggi Lee and Min Liu
<b>Quantifying Re-Engagement in Minecraft</b>	Jonathan Casano, Mikael Fuentes and Maria Mercedes Rodrigo
<b>Prediction of Students' Self-Confidence Using Multimodal Features in an Experiential Nurse Training Environment</b>	Caleb Vatrall, Madison Lee, Clayton Cohn, Eduardo Davalos Anaya, Dan Levin and Gautam Biswas
<b>Desirable Difficulties? The Effects of Spaced and Interleaved Practice in an Educational Game</b>	Jonathan Ben-David and Ido Roll
<b>Emotionally Adaptive Intelligent Tutoring System To Reduce Foreign Language Anxiety</b>	Daneih Ismail and Peter Hastings
<b>Amortised Design Optimization for Item Response Theory</b>	Antti Keurulainen, Isak Westerlund, Oskar Keurulainen and Andrew Howes
<b>Classifying Mathematics Teacher Questions to Support Equitable and Inclusive Mathematical Teaching</b>	Debajyoti Datta, James Bywater, Maria Phillips, Sarah Lilly, Jennie Chiu, Ginger Watson and Donald Brown
<b>RoboBotTS: a Simulation-Based Tutoring System to Support AI Education through Robotics</b>	Sara Guerreiro-Santalla, Helen Crompton and Francisco Bellas
<b>Towards analyzing psychomotor group activity for collaborative teaching using neural networks</b>	Jon Etxeberria and Olga C. Santos
<b>Gamiflow: A Flow Theory-Based Gamification Framework for Learning Scenarios</b>	Geiser Chalco Challco, Ig Ibert Bittencourt, Marcelo Reis, Jário Santos and Seiji Isotani
<b>The Impact of Agency on Emotional Arousal during Game-based Learning</b>	Vishav Jyoti, Megan Wiedbusch, Daryn Dever, James Lester and Roger Azevedo
<b>A quantitative study of NLP approaches to question difficulty estimation</b>	Luca Benedetto
<b>AI Cognitive - Based Systems Supporting Learning Processes</b>	Urszula Ogiela and Marek Ogiela
<b>It's Good to Explore: Investigating Silver Pathways and the Role of Frustration during Game-based Learning</b>	Nidhi Nasiar, Andres F Zambrano, Jaclyn Ocumpaugh, Stephen Hutt, Alex Goslen, Jonathan Rowe, James Lester, Nathan Henderson, Eric Wiebe, Kristy Boyer and Bradford Mott
<b>Evaluating the Rater Bias in Response Scoring in Digital Learning Platform: Analysis of Student Writing Styles</b>	Jinnie Shin, Zeyuan Jing, Lodi Lipien, April Fleetwood and Walter Leite
<b>Using Virtual Agents to Teaching Collaborative Problem Solving</b>	Emmanuel Johnson, Yolanda Gil and Jonathan Gratch
<b>Preserving Privacy of Face and Facial Expression in Computer Vision Data Collected in Learning Environments</b>	Ashwin T S and Ramkumar Rajendran
<b>Item difficulty constrained uniform adaptive testing</b>	Wakaba Kishida, Kazuma Fuchimoto, Yoshimitsu Miyazawa and Maomi Ueno
<b>Simulating Learning From Language and Examples</b>	Daniel Weitekamp, Napol Rachatasumrit, Rachael Wei, Erik Harpstead and Kenneth Koedinger
<b>Learner Perception of Pedagogical Agents</b>	Marei Beukman and Xiaobin Chen
<b>Investigating Pedagogical Agents' Self-regulated Learning Scaffolding in Relation to Learners' Subgoals</b>	Daryn Dever, Megan Wiedbusch, David Organista, Connor Drawdy and Roger Azevedo
<b>Using intelligent tutoring on the first steps of learning to program: affective and learning outcomes</b>	Maciej Pankiewicz, Ryan Baker and Jaclyn Ocumpaugh
<b>Is misrecognition by teachable agents bad for students?</b>	Yuya Asano, Diane Litman, Mingzhi Yu, Nikki Lobczowski, Timothy Nokes-Malach, Adriana Kovashka and Erin Walker
<b>Classification of brain signals collected during a rule learning paradigm</b>	Alicia Howell-Munson, Theresa Mowad, Deniz Sonmez Unal, Kate Arrington and Erin Solovey
<b>A Framework for Evaluating the Usability of AI-based Essay Grading Tools</b>	Erin Hall
<b>Enhancing Engagement Modeling in Game-Based Learning Environments with Student-Agent Discourse Analysis</b>	Alex Goslen, Nathan Henderson, Jonathan Rowe, Jiayi Zhang, Stephen Hutt, Jaclyn Ocumpaugh, Kristy Elizabeth Boyer, Eric Wiebe, Bradford Mott and James Lester
<b>Even boosting stereotypes increase the gender gap in gamified tutoring systems: an analysis of self-efficacy, flow and learning</b>	Maria Takeshita, Geiser Chalco Challco, Marcelo Reis, Jário Santos, Seiji Isotani and Ig Ibert Bittencourt
<b>DancÆR: Efficient and Accurate Dance Choreography Learning by Feedback Through Pose Classification</b>	Irem Bas, Demir Alp, Lara Ceren Ergenc, Andy Emre Kocak and Sedat Yalcin