15th INTERNATIONAL CONFERENCE
ON INTELLIGENT TUTORING SYSTEMS

Conference Program

ITS 2019

KINGSTON Jamaica 3-7 JUNE

Challenges in Artificial Intelligence Pushing the Boundaries of ITS

KEYNOTE SPEAKER
AMRUTH N. KUMAR

JUNE 4, 2019
ITS2019 SELECTED WORKSHOPS AND TUTORIALS

JUNE 5-7, 2019
ITS2019 CONFERENCE

its2019.iis-international.org   contact: info@iis-international.org

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June 3, 2019(Monday)	
18:00 – 20:00	**Conference Registration**

ITS 2019 Program ◆ Workshops and Tutorials

June 4, 2019 (Tuesday)		
08:30 – 09:30	**Conference Registration**	
	Room 1	**Room 2**
09:30 – 10:30	**W1: Optimizing Human Learning 2nd Workshop eliciting Adaptive Sequences for Learning (WeASeL)** *Fabrice Popineau, Michal Valko, Jill-Jênn Vie* https://humanlearn.io/	**T1: AutoTutor Tutorial: Conversational Intelligent Systems and Learning Analytics** *Xiangen Hu, Bor-Chen Kuo, Chen-Huei Liao, Kai-Chih Pai, Chia-Hua Lin, Zhiqiang Cai, Arthur C. Graesser* http://its19.x-in-y.com/
	Coffee Break	
11:00 – 12:30	**W1: Optimizing Human Learning 2nd Workshop eliciting Adaptive Sequences for Learning (WeASeL)**	**T1: AutoTutor Tutorial: Conversational Intelligent Systems and Learning Analytics**
	Lunch	
13:30 – 15:00	**T2: ITS2019 Artificial Intelligence Code Tutorial** *Jordan Micah Bennett* https://its2019.iis-international.org/wp-content/uploads/ITS-2019-Tutorial.pdf	**T1: AutoTutor Tutorial: Conversational Intelligent Systems and Learning Analytics**
	Coffee Break	
15:30 – 17:00	**T2: ITS2019 Artificial Intelligence Code Tutorial**	**T1: AutoTutor Tutorial: Conversational Intelligent Systems and Learning Analytics**

ITS 2019 Program ◆ Conference

June 5, 2019 (Wednesday)	
08:00 – 09:00	**Conference Registration**
09:00 – 09:30	**Opening Ceremony**
09:30 – 10:30 **Room: TBA**	**Keynote Speech** **Amruth Kumar**, Computer Science, Ramapo College of New Jersey "15 Years of Developing, Evaluating and Disseminating Programming Tutors: Lessons Learned" Chair: **Yugo Hayashi**, Ritsumeikan University, Japan
10:30 – 11:00	**Tea/Coffee Break**
11:00 – 12:40 **Room: TBA**	**"Machine Learning" Session** Session Chair: **Yugo Hayashi**, Ritsumeikan University, Japan Paper-11S Analyzing the Group Formation Process in Intelligent Tutoring Systems *Aarón Rubio-Fernández, Pedro J. Muñoz-Merino and Carlos Delgado Kloos* Paper-14S PKULAE: A Learning Attitude Evaluation Method Based on Learning Behavior *Deqi Li, Zhengzhou Zhu, Youming Zhang and Zhonghai Wu* Paper-32F Conceptualization of IMS that Estimates Learners' Mental States from Learners' Physiological Information Using Deep Neural Network Algorithm *Tatsunori Matsui, Yoshimasa Tawatsuji, Siyuan Fang and Tatsuro Uno* Paper-35F Learning by Arguing in Argument-Based Machine Learning Framework *Matej Guid, Martin Možina, Matevž Pavlič and Klemen Turšič*
12:40 – 13:40	**Light Lunch**

13:40 – 15:20 **Room: TBA**	**"Technology" Session** Session Chair: **Maiga Chang,** Athabasca University, Canada Paper-5F Parent-Child Interaction in Children's Learning How to Use a New Application *Akihiro Maehigashi and Sumaru Niida* Paper-17S Analyzing the usage of the classical ITS software architecture &refining it *Nikolaj Troels Graf von Malotky and Alke Martens* Paper-18S Computer-Aided Intervention for Reading Comprehension Disabilities *Chia-Ling Tsai, Yong-Guei Lin, Wen-Yang Lin and Marlene Zakierski* Paper-21F Model for data analysis process and its relationship to the hypothesis-driven and data-driven research approaches *Miki Matsumuro and Kazuhisa Miwa*
15:20 – 15:40	**Tea/Coffee Break**
15:40 – 17:25 **Room: TBA**	**"Personalization" Session** Session Chair: **Alexandra Cristea**, Durham University, UK Paper-16S Decision Support for an Adversarial Game Environment using Automatic Hint Generation *Steven Moore and John Stamper* Paper-20F Detecting Collaborative Learning through Emotions: An Investigation using Facial Expression Recognition *Yugo Hayashi* Paper-34S Providing the Option to Skip Feedback – A Reproducibility Study *Amruth Kumar*
18:00 –20:00	**Welcome Reception**

June 6, 2019 (Thursday)	
08:00 – 09:00	**Conference Check-in**
09:00 – 10:30 **Room: TBA**	**"Technology" Session** Session Chair: **Amruth Kumar**, Ramapo College of New Jersey Paper-36F Testing the Robustness of Inquiry Practices once Scaffolding is Removed *Haiying Li, Janice Gobert and Rachel Dickler* Paper-39F An Adaptive Approach to Provide Feedback for Students in Programming Problem Solving *Priscylla Silva, Evandro Costa and Joseana Régis de Araújo* Paper-50S Adaptive Learning Spaces with Context-Awareness *Valéry Psyché, Ben Daniel Motidyang and Jacqueline Bourdeau*
10:30 – 10:50	**Tea/Coffee Break**
10:50 – 12:30	Panel Discussion: **Intelligent Tutoring Systems and Artificial Intelligence: Changing Education and Impacting Business** Panel Discussion Chair: **Christopher Reckord** – Ttech Ltd. Panelists: Alexandra Cristea - Durham University, Keith Smith- e-LJam, Robert Tucker & Reiza Haniff -UWI Open Campus, Pat Tomlinson – IBM Jamaica, Ricardo Anderson – UWI Representatives of Ministry of Education & Ministry of Science and Technology
12:30 – 13:30	**Light Lunch**
13:30 – 14:30 **Room: TBA**	**"Engaging Modern Learners: Shaping Education with Technology in Schools" Session** Session Chair: **Akihiro Maehigashi** Presentation #1 Topic of their choosing *e-learning representative* Presentation #2 Intelligent Tutoring Systems in Traditional classrooms: Development and implementation *Alexandra Cristea* Presentation #3 The value of early introduction to IT for engaging in the new economy *Christopher Reckord – Ttech Ltd.* Presentation #4 Tablet Nuff but Life Still Rough: Technology for Early Childhood Sustainable Development in Jamaica

	Suzette Kelly-Williams - Shortwood Teachers College
14:30 – 14:50	**Tea/Coffee Break**
14:50 – 15:50	**AI, ITS and learning systems at the UWI** Session Chair: **Carl Beckford** Presentation #1 Ignoring Human-Computer Interaction Design Considerations can lead to Autonomous Systems Failures: The case of the Boeing 737 MAX crash in Ethiopia *Ashley Hamilton-Taylor – UWI, Department of Computing* Presentation #2 Developing a simple and cost-effective VR-enabled learning environment *Louis-Ray Harris – UWI, Department of Computing* Presentation #3 Developing a system to incorporate the deaf in classrooms with no interpreter *André Coy – UWI, Department of Physics*
15:50 – 17:30	**"Assessment" Session** Session Chair: **Bryce Shurts**, Fitchburg State University, USA Paper-6S A Learning Early-warning Model Based on Knowledge Points *Jiahe Zhai, Zhengzhou Zhu, Deqi Li, Nanxiong Huang, Zhang Kaiyue and Yuqi Huang* Paper-13S Reducing Annotation Effort in Automatic Essay Evaluation Using Locality Sensitive Hashing *Tsegaye Misikir Tahsu, Tomas Horvath and Dávid Szabó* Paper-31S Intelligent On-line Exam Management and Evaluation System *Tsegaye Misikir Tashu, Tomáš Horváth and Julius P. Esclamado* Paper-41S Towards Predicting Attention And Workload During Math Problem Solving *Ange Adrienne Nyamen Tato, Roger Nkambou and RamlaGhali*
20:00-23:00	**Gala Dinner**

June 7, 2019 (Friday)	
08:00 – 09:00	**Conference Check-in**
09:00 – 11:30 **Room: TBA**	**"Analytics" Session** Session Chair: **Reva Freedman**, Northern Illinois University, USA Paper-7F On the discovery of educational patterns using biclustering *Rui Henriques, Anna Carolina Finamore and Marco Antônio Casanova* Paper-12F Data-Driven Student Clusters Based on Online Learning Behavior in a Flipped Classroom with an Intelligent Tutoring System *Ines Saric, Ani Grubisic, Ljiljana Seric and Timothy J. Robinson* Paper-15F Analysis and Prediction of Student Emotions While Doing Programming Exercises *Thomas James Tiam-Lee and Kaoru Sumi* Paper-45F Predicting MOOCs Dropout Using only two easily obtainable Features from the First Week's Activities *Ahmed Alamri, Mohammad Alshehri, Alexandra Cristea, Filipe D Pereira, Elaine Oliveira, Lei Shi and Craig Stewart* Paper-47F Representing and Evaluating Strategies for Solving Parsons Puzzles *Amruth Kumar*
11:35 – 12:40	**Poster Session** Session Chair: **Maiga Chang, Athabasca University, Canada** **11:35-11:40** Introduction **11:40-12:00** FIVE minutes presentations for each poster (with maximum THREE slides) **12:00-12:40** Poster exhibitions, Q&A, discussion and collaboration Paper-33P Agents' Cognitive vs. Socio-affective Support in Response to Learner's Confusion *Zhou Long, Dehong Luo, Sheng Xu and Xiangen Hu* Paper-46P

	Patterns of Collaboration Dialogue Acts in Typed-Chat Group Problem-Solving *Duy Bui, Matthew Trotter, Jung Hee Kim and Michael Glass* Paper-48P Analyzing Best Hints for a Programming ITS *Reva Freedman and Ben Kluga* Paper-49P Using a Simulator to Choose the Best Hints in a Reinforcement Learning-Based Multimodal ITS *Manohar Sai Jasti and Reva Freedman*
12:30 – 13:30	**Light Lunch**
13:30 – 15:25 **Room: TBA**	**"Recognition" Session** Session Chair: **Ahmed Alamri**, Durham University, UK Paper-9S Fact Checking Misinformation Using Recommendations from Emotional Pedagogical Agents *Ricky Sethi, Raghuram Rangaraju and Bryce Shurts* Paper-37F Assessing Students' Clinical Reasoning using Gaze and EEG Features *Imène Jraidi, Asma Ben Khedher, Maher Chaouachi and Claude Frasson* Paper-40F Toward Real-Time System Adaptation using Excitement Detection from Eye Tracking *Hamdi Ben Abdessalem, Maher Chaouachi, Marwa Boukadida and Claude Frasson* Paper-42S Predicting subjective enjoyment of aspects of a videogame from psychophysiological measures of arousal and valence *Julien Mercier, Pierre Chalfoun, Mattew Martin, Ange Adrienne Nyamen Tato and Daniel Rivas*
15:30 – 16:00	**Close Ceremony**

Presentation Guidelines

- Presentation time for full papers: 25'plus 5' for questions.

- Presentation time for short papers: 20'plus 5' for questions.

- Poster session comprises A. a panel, in which each presenter has 5minutes (with maximum THREE slides include the cover page) to briefly explain their work and B. a regular poster exhibition in either A0 or A1 size

- Conference rooms will be equipped with laptops and video projectors.

- Authors are required to bring with them their presentation on a USB stick.

Conference Committee
Conference Chair
- **Andre Coy**, University of the West Indies, Jamaica

Program Chairs
- **Maiga Chang**, Athabasca University, Canada
- **Yugo Hayashi**, Ritsumeikan University, Japan

Workshop and Tutorial Chairs
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- **Vasiu Radu**, Polytechnic University of Timisoara, Romania

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- **Stephen Fancsali**, Carnegie Learning, Inc., USA
- **Amruth Kumar**, Ramapo College, USA

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