The 1st Artificial Intelligence and Entertainment Science Workshop (AIES2021)

Theme: Towards Empathic Entertainment Technology

General Chairs

Mohd Nor Akmal Khalid (Japan Advanced Institute of Science and Technology, Japan)
Hiroyuki Iida (Japan Advanced Institute of Science and Technology, Japan)
Umi Kalsom Yusof (Universiti Sains Malaysia, Malaysia)
Ruzinoor Che Mat (Universiti Utara Malaysia, Malaysia)

Program Committee Members

Anggina Primanita (Sriwijaya University, Indonesia)
Apimuk Muangkasem (Associate Business Development, Thailand)
Flávio Soares Corrêa da Silva (University of São Paulo, Brazil)
Helmut Hlavacs (University of Vienna, Austria)
Jason Teo Tze Wi (Universiti Malaysia Sabah, Malaysia)
Junichi Hashimoto (KDDI Corporation, Japan)
Kristian Spoerer (University of Nottingham, United Kingdom)
Luiz Bernardo Martins Kummer (Pontifícia Universidade Católica do Paraná, Brazil)
Loutfouz Zaman (Ontario Tech University)
Miguel Barreda-Ángeles (Vrije Universiteit Amsterdam, Netherlands)
Mathieu Lajante (Ryerson University, Canada)
Mohd Shahrizal Sunar (Universiti Teknologi Malaysia, Malaysia)
Nate Nossal (Toyama Prefectural University, Japan)
Saajid Akram Abuluaih (Japan Advanced Institute of Science and Technology, Japan)
Tsuyoshi Hashimoto (Matsue National College of Technology, Japan)
Tse Guan Tan (Universiti Malaysia Kelantan, Malaysia)
Uri Globus (The Academic College of Tel-Aviv, Israel)
Wei Wang (City University of New York, USA)
Xiong Shuo (Huazhong University of Science and Technology, China)
Zuo Long (Chang'an University, China)

Program Schedule

Time (JST)	Description
16:55 – 17:15	Reception/Webex Login
17:15 – 17:30	Opening Remarks (Chair: Prof. Dr. Hiroyuki Iida)
17:30 – 19:35	Parallel Session (Season 1~4)
19:35 – 20:00	Short Break
20:00 – 20:45	Round Table Discussion (Chair: Mohd Nor Akmal Khalid)
20:45 – 22:00	Keynote Speech by Youichiro Miyake (Chair: Mohd Nor Akmal Khalid)
22:00 – 22:10	Closing Remarks

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Parallel Session

Session 1: Simulation & Behaviour

Chairperson: Luiz Bernardo Martins Kummer

Time (JST)	Description
17:30 – 17:55	**Paper 6:** What Makes an Ideal Team? Analysis of Popular MOBA Games using Weighted Average By *Sagguneswaraan Thavamuni, Hiroyuki Iida and Mohd Nor Akmal Khalid*
17:55 – 18:20	**Paper 7:** Simplification of Team-Based Sports Games By *Sagguneswaraan Thavamuni, Hiroyuki Iida and Mohd Nor Akmal Khalid*
18:20 – 18:45	**Paper 21:** Predicting Subscription Renewal using Binary Classification in World of Warcraft By *Md. Yousuf Hossain and Loutfouz Zaman*
18:45 – 19:10	**Paper 17:** Simulation of Adaptive Neural Fuzzy Inference System (ANFIS) for a Realistic Crowd Evacuation Modelling Based on Dynamic Emotion Force By *Wahida Zakaria, Umi Kalsom Yusof and Haziqah Shamsudin*
19:10 – 19:35	**Paper 18:** Simulation of Exit Selection Behavior in Asymmetrical Layout with Multiple Exits based on an Improved Dynamic Parameters Cellular Automaton Model By *Omar Alidmat, Umi Kalsom Yusof and Haziqah Shamsudin*

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Session 2: Experience Design & Prediction

Chairperson: Tse Guan Tan

Time (JST)	Description
17:30 – 17:55	**Paper 5:** Game-based Psychotherapy Intervention for Memory Disorder: Evolution of Neuro-therapy Game and Its Impacts By *Noraziah Chepa, Asmidah Alwi and Laura Lim Sie-Yi*
17:55 – 18:20	**Paper 8:** Analysis of Reminiscence Elements in Game-Based Intervention for Elderly Using EEG Data By *Asmidah Alwi, Noraziah Chepa and Laura Lim Sie-Yi*
18:20 – 18:45	**Paper 13:** Prototypical: A Board Game Development Framework By *Vincente Campisi and Helmut Hlavacs*
18:45 – 19:10	**Paper 23:** Automatic Creation of Behaviour Trees By *Ralph Dworzanski and Helmut Hlavacs*
19:10 – 19:35	**Paper 14:** Influence of `Jerk' on Gaming Engagement: A Case Study Using Card Games By *Naying Gao, Hengyuan Chang, Mohd Nor Akmal Khalid and Hiroyuki Iida*

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Session 3: Search & Design

Chairperson 1: Apimuk Mungkasem
Chairperson 2: Anggina Primanita

Time (JST)	Description
17:30 – 17:55	**Paper 11:** Proposing a Testing Model for Generating Constraint Networks with Controlled Chromatic Number and Scalable Complexity By *Saajid Abuluaih, Hiroyuki Iida and Azlinah Mohamed*
17:55 – 18:20	**Paper 12:** Proof by Exhaustion for Proving the Efficiency Improvement on the Performance of Backtracking Algorithm Using Contribution Number By *Saajid Abuluaih, Hiroyuki Iida and Azlinah Mohamed*
18:20 – 18:45	**Paper 9:** Using Virtual Reality for Training Frontline Employees in Empathy: A Review and Research Agenda By *Mathieu Lajante and Muskan Azeem*
18:45 – 19:10	**Paper 24:** Fog of Search By *Saajid Abuluaih, Hiroyuki Iida and Azlinah Mohamed*
19:10 – 19:35	**Paper 10:** Neutralising Australia Map By *Saajid Abuluaih, Hiroyuki Iida and Azlinah Mohamed*

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Session 4: Analytic & Gamification

Chairperson 1: Mathieu Lajante
Chairperson 2: Uri Globus

Time (JST)	Description
17:30 – 17:55	**Paper 19:** Player Satisfaction Model On Driving Type Analysis By *Xiaohan Kang, Mohd Nor Akmal Khalid and Hiroyuki Iida*
17:55 – 18:20	**Paper 16:** Entertainment Analysis of Single-Agent Game: Case Study in Match-3 Puzzle Game By *Chang Liu, Muhammad Nazhif Rizani, Saajid Abuluaih, Mohd Nor Akmal Khalid and Hiroyuki Iida*
18:20 – 18:45	**Paper 4:** Analysis of the College Underachievers' Transformation via Gamified Learning Experience By *Wei Kian Tan, Mohd Shahrizal Sunar and Eg Su Goh*
18:45 – 19:10	**Paper 22:** Motion-in-Mind Approach Level Generation in FlowFree By *Muhammad Nazhif Rizani, Chang Liu, Saajid Abuluaih, Mohd Nor Akmal Khalid and Hiroyuki Iida*
19:10 – 19:35	**Paper 15:** Steam Game Achievement Analysis By *Muhammad Nazhif Rizani, Sagguneswaraan Thavamuni, Mohd Nor Akmal Khalid and Hiroyuki Iida*

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Roundtable Discussion

Chairperson: Mohd Nor Akmal Khalid

Agenda:

1. Data and Statistics
2. Plan for Special Issue Publication
3. Lesson Learnt and Discussion on Theme and Topics
4. Future Plans

Keynote Speaker

Chairperson: Mohd Nor Akmal Khalid

Speaker Name: Youichiro Miyake
Speech Title: Empathic Entertainment in Digital Game
Speech Abstract:

A digital game give a unique experience to a user. AI system in Digital game consists of three kinds of AI such as Meta-AI, Character AI, and Spatial AI. Game experience is formed by them. Meta-AI keeps watching a status of game and controlling characters, objects, terrain, and weather and so on dynamically to make many dramatic and empathic situations in a game for users. Character AI is a brain of an autonomous game character to make a decision by itself, but sometimes it acts to achieve a goal issued from Meta-AI. Spatial AI analyses a terrain and abstracts its features to communicate them to Meta-AI and Character-AI. They can make their intelligent decisions by using specific terrain and environment features. The AI system is called MCS-AI dynamic cooperative model (Meta-AI, Character AI, and Spatial AI dynamic cooperative model). In the lecture, I will explain the system by showing some cases of published digital games

Biography:

Youichiro Miyake, the lead AI researcher in SQUARE ENIX, has been developing games and researching game AI technologies in these 10 years. He has developed and technically designed AI systems for many games, and also he teaches students at the University.

AI Technical Advisor, “FINAL FANTASY XIV”
Lead AI Architect, “FINAL FANTASY XV”
AI Technical Director, “KINGDOM HEARTS III”
QA Automation AI Technical Advisor, “FINAL FANTASY VII REMAKE”

Visiting Researcher, Research Center for Advanced Science and Technology, The University of Tokyo	(Oct. 2018 to present)
Visiting Professor, Institute of Mathematics for Industry, Kyushu University	(Apr. 2019 to present)
Specially Appointed Professor, Graduate School of Artificial Intelligence and Science, Rikkyo University	(Apr. 2020 to present)
Chair of SIG-AI in Japan Chapter, International Game Developers Association (IGDA Japan)	(2006 to present)
Director, Digital Games Research Association (DiGRA), JAPAN	(2013 to present)
Director, The Society for Art and Science	(Nov. 2015 to present)
Director, Japanese Society of Artificial Intelligence	(Oct. 2020 to present)