

# FINAL PROGRAM



18 – 20 September 2018



# Abertay University

Dundee, Scotland  
United Kingdom  
Organized and Sponsored by



## PROGRAMME AT A GLANCE

### September 18

08.30-15.00 Registration  
09.00-09.15 Welcome  
09.15-10.00 Keynote Alan Hinchcliffe  
10.00-10.30 Coffee Break  
10.30-12.00 Session: Procedural Game Generation and Mechanics  
12.00-13.30 Lunch  
13.30-14.30 Session: Game AI  
14.30-15.00 Coffee Break  
15.00-16.00 Session: Playing Styles  
16.00-17.00 Invited Talk: Joseph Delappe  
19.00 Social Programme – Dinner at the DCA (Dundee Contemporary Arts) centre-(not included in the conference fee, on a voluntary basis only).

### September 19

09.00-15.00 Registration  
09.00-10.00 Keynote Mike Cook  
10.00-10.30 Coffee Break  
10.30-12.30 Session: Game Development Methodology and Mobile Gaming  
12.30-13.30 Lunch  
13.30-14.30 Session: Serious Gaming I  
14.30-15.00 Coffee Break  
15.00-16.00 Session: Serious Gaming II  
16.30-18.00 VR Workshop  
20.00-23.00 Conference Visit and Dinner

### September 20

09.00-09.30 Registration  
09.00-10.00 Session: Augmented Play  
10.00-10.30 Coffee Break  
10.30-12.00 Online Gaming  
12.00-12.15 Closing Session

# GAME-ON'2018 FINAL PROGRAMME

Overhead and LCD Projector are standard

The underlined authors are usually the presenters.

Conference Site: **the Hannah MacLure Centre on the 3rd floor of the Student Centre Building at [Abertay University](http://www.abertay.ac.uk), Bell Street, DD1 1HG Dundee, Scotland, United Kingdom**

For any local information contact David King: 📞 Tel. +44 01382 308297, ✉ Email:

[d.king@abertay.ac.uk](mailto:d.king@abertay.ac.uk),

**Coffee breaks** at the Hannah MacLure centre (3rd floor Student Centre) and **lunches** at the Bar One, 2nd floor of the Student Centre

**Only papers in gray boxes are eligible for the best paper award**

## Tuesday, September 18, 2018

08.30 - 15.00 **Registration**

09.00 - 09.15 **Hannah MacLure centre- WELCOME**

### Welcome Address

University Principal Prof. Nigel Seaton

09.15 - 10.00 **Hannah MacLure centre - SESSION I  
KEYNOTE SPEAKER**

**09.15-10.00**

**Session Chairperson:**

**David King, Abertay University, Dundee, United Kingdom**



**GAME\_KEY\_03**

**[Bringing Expressive Virtual Characters to Life](#)**

Allan Hinchcliffe, Lead Engineer, Character Engine  
London, United Kingdom

## Tuesday, September 18, 2018

10.00 - 10.30 Coffee Break in the Hannah MacLure centre

### 10.30 - 12.00 Hannah MacLure centre - SESSION II PROCEDURAL GAME GENERATION AND MECHANICS

<b>10.30-12.00</b>	<b>Session Chairperson:</b> <b>David King, Abertay University, Dundee, United Kingdom</b>	
	<b>GAME_DEV_METH_06</b> <b>Computational Creativity and Game Design: Towards Procedural Game Generation</b> Jorge Ruiz Quiñónes and <u>Antonio J. Fernández-Leiva</u> ..... 55	
	<b>GAME_DEV_METH_07</b> <b>Fast Configurable Tile-based Dungeon Level Generator</b> <u>Ondřej Nepožitek</u> and Jakub Gemrot..... 61	
	<b>GAME_ANIM_01</b> <b>Creating Gameplay Mechanics with deformable Characters</b> <u>Grant Clarke</u> ..... 66	

12.00 - 13.30 Lunch in Bar One, 2nd floor of the Student Centre

### 13.30 - 14.30 Hannah MacLure centre - SESSION III GAME AI

<b>13.30-14.30</b>	<b>Session Chairperson:</b> <b>Grant Clarke, Abertay University, Dundee, United Kingdom</b>	
	<b>GAME_AI_02</b> <b>Monte Carlo Tree Search for Quoridor</b> Victor Massagué Respall, <u>Joseph Alexander Brown</u> and <u>Hamna Aslam</u> ..... 5	
	<b>GAME_AI_03</b> <b>Monte Carlo Tree Search for Love Letter</b> Tamirlan Omarov, <u>Hamna Aslam</u> , <u>Joseph Alexander Brown</u> and <u>Elizabeth Reading</u> ..... 10	

## Tuesday, September 18, 2018

14.30 - 15.00 Coffee Break in the Hannah MacLure centre

15.00 - 16.00 Hannah MacLure centre - SESSION IV  
PLAYING STYLES

15.00-16.00

Session Chairperson:

Grant Clarke, Abertay University, Dundee, United Kingdom

**GAME\_OPP\_01 – VIDEO PRESENTATIONS**

**Dynamically Extracting Play Style in Educational Games**

Reza Khoshkangini, Annapaola Marconi, Santiago Ontañón

and Jichen Zhu .....37

**GAME\_OPP\_02**

**Playing Styles in Starcraft**

Yaser Norouzzadeh Ravari, Sander Bakkes and Pieter Spronck.....47

16.00 - 17.00 Hannah MacLure centre - SESSION V  
INVITED SPEAKER

16.00-17.00

Session Chairperson:

Grant Clarke, Abertay University, Dundee, United Kingdom



**GAME\_INV\_01**

**[Head Shot! Playing Politics in Computer Games](#)**

**Joseph DeLappe**, Professor of Games and Tactical Media Division of Games and Art , Abertay University, Dundee, Scotland, United Kingdom

## Tuesday, September 18, 2018

17.00 - 18.00 **Kydd Building**  
**POST GRAD STUDENT EXHIBITION**

17.00-18.00



**At the Centre for Excellence in Games Education**  
**2nd floor of the Kydd Building**  
**room 2523**

19.00 - **FREE EVENING OR JOIN US FOR AN INFORMAL DINNER ON A VOLUNTARY BASIS (NOT INCLUDED IN THE CONFERENCE FEE) AT THE**



**DCA (Dundee Contemporary Arts) centre**  
 152 Nethergate, DD1 4DY Dundee  
 ☎ Tel: +44. (0)1382 432 444  
 ☎ Tel Jute Café Bar: +44.(0)1382 909 246

## Wednesday, September 19, 2018

09.00 - 15.00 **Registration**

09.00 - 10.00 **Hannah MacLure centre - SESSION VI  
KEYNOTE**

09.00-10.00

**Session Chairperson:**  
David King, Abertay University, Dundee, United Kingdom



**GAME\_KEY\_01**

[Watch This Possibility Space: The Future of Creative AI in Games](#)  
**Mike Cook**, Senior Research Fellow University of Falmouth, Falmouth, United Kingdom and researcher/developer at [Games by Angelina](#)

10.00 - 10.30 **Coffee Break in the Hannah MacLure centre**

10.30 - 12.30 **Hannah MacLure centre - SESSION VII  
GAME DEVELOPMENT METHODOLOGY AND MOBILE GAMING**

10.30-12.30

**Session Chairperson:**  
Chris Acornley, Abertay University, Dundee, United Kingdom

**GAME\_AFFECT\_01**

**Affective Games: A Multimodal Classification System**

[Salma Hamdy](#) and [David King](#) ..... **19**

**GAME\_DEV\_METH\_02**

**Player Age and Affordance Theory in Game Design**

[Hamna Aslam](#), [Joseph Alexander Brown](#) and [Elizabeth Reading](#) ..... **27**

## Wednesday, September 19, 2018

### GAME\_DEV\_METH\_04

#### Role and Experiences of Tutorial in Location Based Game

Kaisa Könnöla, Tuomas Ranti, Tapani N. Joelsson

and Tuomas Mäkilä..... 91

### GAME\_DEV\_METH\_01

#### Quality Assurance in a Mobile Game Project: A Case Study

Maxim Mozgovoy ..... 96

12.30 - 13.30 Lunch in Bar One, 2nd floor of the Student Centre

13.30 - 14.30 Hannah MacLure centre - SESSION VIII  
SERIOUS GAMING I

13.30-14.30

Session Chairperson:

Karen Meyer, Abertay University, Dundee, United Kingdom

### GAME\_SER\_02

#### Motivational Game Design and Pro-Environmental Elements in Sustainability Applications

Kaisa Könnöla, Tuomas Mäkilä, Kaapo Seppälä

and Teijo Lehtonen ..... 129

### GAME\_SER\_03

#### Gamifying Learning of Maritime Standard Operational Procedures

Olli I. Heimo, Tapani Joelsson, Sari Nyroos and Tuomas Mäkilä... 133

14.30 - 15.00 Coffee Break in the Hannah MacLure centre

15.00 - 16.00 Hannah MacLure centre - SESSION IX  
SERIOUS GAMING II

15.00-16.00

Session Chairperson:

Karen Meyer, Abertay University, Dundee, United Kingdom

**Wednesday, September 19, 2018**

**GAME\_DEV\_METH\_03**

**Designing Gamification for Constructive Competition**

Mark Featherstone..... 138

**GAME\_SER\_05**

**Developing a Gamified Platform to Involve Unemployed Youth in Job-Seeking Activities**

Juho Mattila, Eeva Leinonen, Ilkka Hietaniemi, Aryan Firouzian and Petri Pulli ..... 144

16.00 - 18.00      **LOCATION TBC - SESSION X**  
**VR WORKSHOP**

**16.00-18.00**

**Session Chairperson:**

**Grant Clarke, Abertay University, Dundee, United Kingdom**

The idea behind the VR workshop is to have an open discussion around the locomotion problem in VR games. The workshop will be broken into 2 stages:

Stage 1: Split the delegates into groups and experiment with a varied collection of VR games that take different solutions to allow the player to move around a virtual space. The idea is to have a number of VR stations where everyone can sample more than one title. The titles themselves will be a collection of demos built by Abertay staff and students along with some external titles.

Stage 2: Each group would then have a round table discussion and present their findings to the other teams. The idea here is to collect common points raised by each group that may form a useful set of guidelines when tackling this problem.

**Wednesday, September 19, 2018**

**CONFERENCE DINNER**

**19.00-23.00**



The Conference dinner will be held on Wednesday the 19th of September at

[Discovery Point](#)

Discovery Quay

DD1 4XA Dundee

Scotland, United Kingdom

 Tel: +44 (0)1382 309060

 Email: [admin@dundeeheritage.co.uk](mailto:admin@dundeeheritage.co.uk)

## Thursday, September 20, 2018

09.00 - 09.30 **Registration**

09.00 - 10.00 **Hannah MacLure centre – SESSION XI  
AUGMENTED PLAY**

**09.00-10.00** **Session Chairperson:**  
**David King, Abertay University, Dundee, United Kingdom**

**GAME\_AUG\_01**  
**Beyond Pokemon Go Advances in Augmented Reality for Games**  
Ken Newman, Tina Gates and Bilal Ahmed..... **75**

**GAME\_AUG\_02**  
**Immersion Issues in Haptic Experiences**  
Helena Barbas ..... **81**

10.00 - 10.30 **Coffee Break in the Hannah MacLure centre**

10.30 - 12.00 **Hannah MacLure centre – SESSION XII  
ONLINE GAMING**

**10.30-12.00** **Session Chairperson:**  
**David King, Abertay University, Dundee, United Kingdom**

**GAME\_ONL\_01**  
**Trade-offs and Challenges of Cloud Gaming in Practice**  
Robert J. Grigg and René Hexel..... **101**

**GAME\_ONL\_02**  
**An Audience Participation Angry Birds Platform for Social Well-Being**  
Yuxuan Jiang, Pujana Paliyawan, Ruck Thawonmas  
and Tomohiro Harada ..... **116**

**GAME\_ONL\_03**  
**Citizen's Interactions in "Smart Game Playing Environments"**  
Liliana Vale Costa, Ana Isabel Veloso and Óscar Mealha ..... **121**

## Thursday, September 20, 2018

12.00 - 12.15 **Hannah MacLure centre – SESSION XIII**  
**CLOSING SESSION AND BEST PAPER AWARD**

**12.00-12.15** **Session Chairperson:**  
**David King, Abertay University, Dundee, United Kingdom**  
**Philippe Geril, EUROSIS-ETI, Ostend, Belgium**

### SOCIAL PROGRAMME INFORMATION

#### Lunches and Coffee breaks



Coffee breaks will be served in the **Hannah MacLure centre, which is on the 3rd floor of the Student Centre Building** and lunches will be served in **Bar One, on the 2nd floor of the Student Centre Building.**

[Abertay University](https://www.abertay.ac.uk)

Bell Street  
 DD1 1HG Dundee  
 Scotland, United Kingdom

 Tel: +44 (0)1382 308 000

#### Conference Dinner on the 19th of September



The Conference dinner will be held on Wednesday the 19th of September at

[Discovery Point](https://www.discoverypoint.co.uk)

Discovery Quay  
 DD1 4XA Dundee  
 Scotland, United Kingdom

 Tel: +44 (0)1382 309060

 Email: [admin@dundeheritage.co.uk](mailto:admin@dundeheritage.co.uk)

# SESSION CHAIR INFORMATION

## Information for Session Chairs

Session Chairs are chosen on a voluntary basis by proposals by either authors or local committee members or are appointed by the Track Chairs, General Program Chair or General Conference Chair. They are responsible for their assigned session. They make sure their speakers are available, take care of the timing within the session, chair the discussion after each presentation and introduce each speaker based on the CV's given to them by the authors. In case they chair a session featuring **extended papers**, then they are required to distribute and collect the reviews of that or those papers at the beginning and end of the session. If they have time they should also indicate in their papers the number of session participants.



**SEE YOU ALL NEXT YEAR AT  
GAMEON 2019, September 18-  
20, 2019, [NHTV Breda](#)  
[University of Applied Sciences](#),  
Breda, The Netherlands**

**Proposals for special  
tracks/tutorials/demos can be  
sent in by January 30<sup>th</sup> 2019**



# CONFERENCE LOCATION

## How to Reach Dundee

### By Plane

Dundee Airport, located in the heart of Scotland, is the most convenient fly-in destination for some 1000 square miles of central Scotland and operates 2 flights on week days to and from London Stansted ([Loganair](#)).

Taxis are available upon request from outside [Dundee Airport](#) and should take approximately ten minutes to arrive at the University.

Alternatively fly in through [Edinburgh Airport](#) and take a train from [Edinburgh Waverley station](#) to Dundee.

### By Rail (Dundee Station)

We are just ten minutes' short walk from the train station. Taxis are available outside its main entrance. Journey information is available from [National Rail Enquiries](#). Tickets can be bought directly from [East Coast](#) and [Virgin Rail](#).

### By Coach and Bus: National coach services

We are just ten minutes' short walk from the bus station. Taxis are available in Trades Lane. ([National Express Coaches](#), [Megabus](#) and [Citylink](#)).

### By Car

Driving directions can also be generated from [Google Maps](#).

There are a number of [public car parks](#) available around Abertay University.

### Useful Links

- [Dundee Weather Forecast](#)
- [Visit Dundee](#)
- [Dundee Travel](#)
- [Visit Scotland- Dundee](#)

## EUROSIS Forthcoming Conferences



### [ESM'2018](#)

October 24-26, 2018

Ghent University, Ghent, Belgium



### **SCIFI-IT'2019**

April 1-3, 2019

[De Krook](#), Ghent, Belgium



### **ISC'2019,**

Week of June 1st, 2019

[ISEL](#)

Lisbon, Portugal,

**NASTEC'2019, GAMEON-NA'2019**, Canada

**GAMEON'2019**, September 18-20, NHTV Breda University of Applied Sciences, Breda, The Netherlands

**ESM'2019**, October 2019, Palma de Mallorca, Spain (TBC)

**FOODSIM'2020**, April 6-9, 2020, [University of Leuven Research Centre](#), Ghent, Belgium

# eurosis

EUROSIS was borne out of discussions with the European Community to set up a new kind of Society, which would be project driven instead of driven by pure membership and conferences.

The aim of the new Society is to set up topic related Technical Committees which link directly to European Projects in the field of computer simulation and related areas and to act as a knowledge pool for future European Networks of Excellence, like MOSAIC.

If you would like to receive more information about EUROSIS, please contact

**Philippe Geril**  
**EUROSIS-ETI**  
**European Simulation Office**  
**Greenbridge Science Park**  
**Ghent University – Ostend Campus**  
**Wetenschapspark 1**  
**Plassendale 1**  
**B- 8400 Ostend**  
**Belgium**  
 **Tel: +32.59.255.330**  
 **Fax: +32.59.255.339**  
 **Email: Philippe.Geril@eurosis.org**

Please send me info on EUROSIS:

Name:.....

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Ad-  
dress:.....

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Telephone:  
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Fax:  
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Email:  
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# GAME-ON'2018 Registration Form

Please legibly print or type and fill out completely. (Check appropriate boxes where necessary)

FIRST NAME	LAST NAME	M.I.
COMPANY OR AFFILIATION		
Mailing address (tick one): <input type="checkbox"/> HOME <input type="checkbox"/> BUSINESS		
STREET		
CITY		
ZIPCODE	COUNTRY	
TELEPHONE	FAX	
E-MAIL		
DATE	SIGNATURE	
1. <input type="checkbox"/> <b>EUROSIS member € 565 Member Number:</b> _____		€ _____
2. <input type="checkbox"/> <b>Members of Sponsor or Affiliate Society € 565</b>		€ _____
3. <input type="checkbox"/> <b>Non-Member Participant € 610</b>		€ _____
4. <input type="checkbox"/> <b>Students, <u>who are not authors</u> but who wish to attend the conference, or <b>ONE DAY PARTICIPANTS</b> pay: € 450</b>		€ _____
(Above registration fees include, one copy of the PROCEEDINGS, all midday meals, cocktail, refreshments, coffees and social program,) One Day Participants and Non-Author Students cannot participate in the conference dinner.		
5. <input type="checkbox"/> <b>Conference Dinner Ticket for Companion € 90</b> <input type="checkbox"/> <b>Lunch Ticket for Companion € 25/day</b>		€ _____
6. <input type="checkbox"/> <b>Extra Conference Proceedings € 40 Cash and Carry</b>		€ _____
VAT Number if applicable: _____		
<b>TOTAL AMOUNT DUE</b>		€ _____
		€ _____
<b>TOTAL AMOUNT REMITTED</b>		€ _____

Pay by **CREDIT CARD** and fill in the information below:

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