FINAL PROGRAM

22 – 24 September 2021

Aveiro, Portugal
Organized and Sponsored by
PROGRAMME AT A GLANCE

Due to COVID19 and the ensuing travel restrictions presentations will be online making GAME-ON 2021 an online event. Online presentations will be denoted with the affix ONL after the paper number. All times in the programme are local times (WEST — Western European Summer Time)

Videos and Slides of the online presentations will be made available to view for all GAME-ON 2021 participants only on the EUROSIS website.

Wednesday September 22

08.30-14.30 Registration
09.00-09.30 Onsite and Online Welcome
09.30-10.30 Keynote Simon See
10.30-11.00 Coffee Break
11.00-12.30 Session Game Analysis & Theory
12.30-13.30 Lunch
13.30-14.30 Keynote Sanaul Haque
14.30-15.00 Coffee Break
15.00-16.00 Session Mobile Gaming
17.00 end of Day 1

Thursday September 23

08.30-15.30 Registration
09.30-10.30 Keynote Maxim Mozgovoy
10.30-11.00 Coffee Break
11.00-12.30 Session NPC’S and Avatars
12.30-13.30 Lunch
13.30-14.30 Session Gamification I
14.30-15.00 Coffee Break
15.00-16.00 Session Gamification II
16.00 end of Day 2

Friday September 24

08.30-12.30 Registration
09.30-10.30 Keynote Davide Gaddia
10.30-10.45 Coffee Break
10.45-12.45 Session: GAME AI
12.45-13.30 Lunch
13.30-14.30 Workshop
14.30-15.00 Coffee Break
15.00-17.00 Roundtable Panel Discussion
17-00-17.15 Closing Session
End of Conference
GAME-ON’2021 FINAL PROGRAMME

Overhead and LCD Projector are standard. The room has a screen for online presentations. The underlined authors are usually the presenters.
Conference Site: University of Aveiro, DECA Auditorium, Department of Communication and Art, Campus Universitário de Santiago, 3810-193 Aveiro /or ONLINE ROOM
For any local information contact: Tel. +351.234.370.389, Email: lilianavale@ua.pt,
Coffee breaks and lunches at the University or at the comfort of everybody’s home

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

Wednesday, September 22, 2021

08.30 - 14.30 Registration

09.00 - 09.30 DECA Auditorium/Online Room - WELCOME

Welcome and General Information
Paulo Jorge Ferreira, Rector of the University of Aveiro
Nelson Zagalo, DigiMedia Research Coordinator
Ana Veloso, GAME-ON’2021 General Conference Chair

Opening of GAME-ON’2021
Ana Veloso, GAME-ON’2021 General Conference Chair

09.30 - 10.30 DECA Auditorium/Online Room - SESSION I
KEYNOTE SPEAKER

09.30-10.30 Session Chairperson:
Nelson Zagalo, DigiMedia, University of Aveiro, Aveiro, Portugal

GAME_KEY_01_ONL
AI and Games Technology
Simon See, Senior Director, Nvidia AI Technology Center, Singapore
Wednesday, September 22, 2021

10.30 - 11.00  Coffee Break

11.00 - 12.30  DECA Auditorium/Online Room - SESSION II
GAME ANALYSIS & THEORY

11.00-12.30  Session Chairperson:
Esteban Clua, Computer Science Department, Universidade Federal Fluminense, Brazil

GAME_01_AN_METH_ONL
The Wolf among Us: Heuristic Evaluation of a Digital Game with Narrative
Cláudia Ortet, Tânia Ribeiro and Ana Isabel Veloso .......................5

GAME_02_AN_METH_ONL
FEZ Game – An Heuristic Evaluation
Francisco Regalado, Tânia Ribeiro and Ana Isabel Veloso .............12

GAME_METH_04_ONL
Bursted Behavior Trees
Jiří Berny and Jakub Gemrot .........................................................19

12.30 - 13.30  Lunch

13.30 - 14.30  DECA Auditorium/Online Room - SESSION III
KEYNOTE SPEAKER

13.30-14.30  Session Chairperson:
Liliana Costa, DigiMedia, University of Aveiro, Aveiro, Portugal

INV_03_ONL
Sustainable Resilient Gamified Digital Solutions for the Next Generation
Sanaul Haque, LUT University, Lappeenranta, Finland
Wednesday, September 22, 2021

14.30 - 15.00 Coffee Break

15.00 - 16.00 DECA Auditorium/Online Room - SESSION IV
MOBILE GAMING

15.00-16.00 Session Chairperson:
Mónica Aresta, DigiMedia, University of Aveiro, Aveiro, Portugal

GAME_PER_01_METH_ONL
Gamification Design Patterns and Touchscreen Interactions in
Mobile Apps for Senior Citizens: An Overview
Cláudia Ortet, Liliana Costa and Ana Isabel Veloso.........................113

GAME_MOBILE_VR_01_ONL
MusA: a Gamified Virtual Reality Museum
Fernando Sousa, José Nunes, Carlos Santos, João Magalhães,
Joaquim Moreira and Mário Vairinhos........................................120

FREE EVENING
### Thursday, September 23, 2021

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<td>Antonio Coelho, FEUP, University of Porto, Porto, Portugal</td>
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<td><strong>AI at Heart: Experiences of a Mobile Game Developer</strong></td>
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<td>José Nunes, DigiMedia, University of Aveiro, Aveiro, Portugal</td>
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<td>Why we play whom we play: On the Correlation between Player Personality and Choice of Avatar</td>
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<td>Lukas Keuter and Emmanuel Guardiola</td>
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12.30 - 13.30  Lunch

13.30 - 14.30  DECA Auditorium/Online Room - SESSION VII
               GAMIFICATION I

13.30-14.30  Session Chairperson:
              Carlos Santos, DigiMedia, University of Aveiro, Aveiro, Portugal

GAMIF_01_DES_ONL  
Designing a Gamified Self-Compassion Training
L.M. van der Lubbe, C. Gerritsen, M.C.A. Klein, K.V. Hindriks
and R.F. Rodgers.................................................................79

GAMIF_03_ONL  
A Pilot Study of a Gamified Self-Compassion Training
L.M. van der Lubbe, C. Gerritsen, M.C.A. Klein, K.V. Hindriks
and R.F. Rodgers.................................................................86

14.30 - 15.00  Coffee Break

15.00 - 16.00  DECA Auditorium/Online Room - SESSION VIII
               GAMIFICATION II

15.00-16.00  Session Chairperson:
              Luis Pedro, DigiMedia, University of Aveiro, Aveiro, Portugal

GAMIF_05_ONL  
“Gamification for All”: Planning and Designing a Community-
Oriented Gamification Strategy
Francisco Regalado, João Henrique Silva, Sónia Machado, Liliana Va-
le Costa, Ana Veloso, Carlos Santos and Óscar Mealha .................94

GAME_SER_01_ONL  
OutSmart! Evaluation of a Serious Game and its Conversational
Interface for Reflective Social Media Use
Barbara Göbl, Dayana Hristova, Suzana Jovicic, Simone Kriglstein
and Helmut Hlavacs...............................................................102

FREE EVENING
Friday, September 24, 2021

08.30 - 12.30  Registration

09.30 - 10.30  DECA Auditorium/Online Room - SESSION IX
KEYNOTE SPEAKER

09.30-10.30  Session Chairperson:
Mario Vairinhos, DigiMedia, University of Aveiro, Aveiro, Portugal

INV_01_ONL
An(other) overview of Procedural Content Generation Techniques applied to Game Design and Development
Davide Gadia, Università degli Studi di Milano, Milan, Italy

10.30 - 10.45  Coffee Break

10.45 - 12.45  DECA Auditorium/Online Room - SESSION X
GAME AI

10.45-12.45  Session Chairperson:
Pedro Beça, DigiMedia, University of Aveiro, Aveiro, Portugal

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Solitaire Paper Automation: When Solitaire Modern Board Game Modes Approach Artificial Intelligence
Micael Sousa and Marco Silva.................................................................35

GAME_AFFECT_01_ONL
Towards Effectively Adapting Games: What needs to be Conquered to Achieve Adaptation
Phil Lopes and Micaela Fonseca............................................................43

GAME_LEARN_01_ONL
Human vs Wavefunctioncollapse (WFC) Video Game City General Challenge
Werner Gaisbauer and Helmut Hlavacs ........................................51
Towards Training Swarms for Game AI
Estefano Palacios and Enrique Peláez

12.45 - 13.30  Lunch

13.30 - 14.30  DECA Auditorium/Online Room - SESSION XI
WORKSHOP

13.30-14.30  Workshop Chairperson:
Pedro Cardoso, DigiMedia, University of Aveiro, Aveiro, Portugal

WORK_01_ONL
Using Modern Board Game Mechanisms to develop Simple Analog Serious Games
Micael Sousa, University of Coimbra, Coimbra, Portugal

14.30 - 15.00  Coffee Break

15.00 - 17.00  DECA Auditorium/Online Room - SESSION XII
ROUND TABLE DISCUSSION

15.00-17.00  Roundtable Moderator:
Liliana Vale Costa, University of Aveiro, Aveiro, Portugal

RTD_01_ONL
The Use of Digital Games and AI for Health and Wellbeing

Luis Quintero, Data Science Group, Stockholm University, Stockholm, Sweden
Ricardo Velásquez, Alternova, Newark, USA
John Edison Muñoz Cardona, University of Waterloo, Canada
Friday, September 24, 2021

17.00 - 17.15 DECA Auditorium/Online Room - SESSION XIII
CLOSING SESSION AND BEST PAPER AWARD

17.00-17.15 Session Chairperson:
Ana Veloso, DigiMedia, University of Aveiro
Óscar Mealha, DigiMedia, University of Aveiro
Philippe Geril, EUROISIS-ETI, Ostend, Belgium
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.

THE NUMBERS NEXT TO THE PRESENTATIONS DENOTE THE PAGE-NUMBERS IN THE PROCEEDINGS. IF NO NUMBERS ARE MENTIONED THEN THIS PAPER IS NOT PUBLISHED IN THE PROCEEDINGS

THE AUTHORS WHO ARE UNDERLINED ARE NORMALLY THE PRESENTERS

ONLY PAPERS IN GREY BOXES ARE THE EXTENDED PAPERS ELIGIBLE FOR THE BEST PAPER AWARD

PAPER NUMBERS IN THE FINAL PROGRAMME FOLLOWED BY “ONL” MEAN THESE PAPERS WILL BE PRESENTED ONLINE
GAME 2022 FIRST ANNOUNCEMENT

SEE YOU ALL NEXT YEAR AT GAME-ON® 2022
September 2022
Location to be announced soon

Proposals for special tracks/tutorials/demos can be sent in by November 10\textsuperscript{th} 2021
CONFERENCE LOCATION

Conference Venue

University of Aveiro
DeCA auditorium
Department of Communication and Art
Campus Universitário de Santiago
3810-193 Aveiro
Tel. +351.234.370.389
Email: lilianavale@ua.pt

Aveiro Map
CONFERENCE LOCATION

How to Reach Aveiro

By Plane
When travelling to Aveiro by plane, the closest airport will be Francisco Sá Carneiro International Airport in Oporto, located some 70 kms to the north of Aveiro. Your other possible point of entry by plane would be Portela International Airport - (other website) in Lisbon which is located 250 kms to the south of Aveiro.

From Oporto Airport to Aveiro by train
The trip between the airport and the two main Porto railway stations (called Porto-Campanhã and Porto São Bento), which have direct rail connections to Aveiro, can be done by taxi for around €20 and takes around 20-30 minutes. A less expensive way to reach the Porto-Campanhã and Porto São Bento railway stations is to use the Metro (E line), which has a terminal at the airport. The trips between the airport and the railway stations take about 32 minutes and the ticket costs €1.85 (Z4 ticket). Click here for Metro information.

The train journey to Aveiro takes between 40 minutes and 1h15, depending on the type of train and train station used. The best choice of train service is the inexpensive urban train service (Urbano), which provides a direct route to Aveiro with a journey time of 1h15 A single ticket from Porto to Aveiro costs €3.55/€1.80 (adult/child), and the return ticket is the price of two singles €7.10/€3.60 (adult/child). The journey falls within " Zone 9" pricing bracket of the Porto urban train lines.

There are also express trains (called Intercidades IC or Alfa Pendular), which take 43-53 minutes, but these trains are significantly more expensive (from € 11.70 to € 19.70) and require a connection at Porto-Campanhã. For a detailed fare guide, please see the CP website: Click here for IC train timetables.

From Lisbon Airport to Aveiro by train
If you're arriving by plane, the simplest form of transport to Aveiro is by train from Gare do Oriente trainstation. To get to the train station, you can go by taxi, which takes about 10 minutes and costs around €10, but there are less expensive ways to get there, by bus, for example. A ticket to the city center should cost €1.35. One also has an option of purchasing an all day ticket at €3.35. AEROBUS: Linking the Airport to downtown Lisbon and Cais do Sodre (every 20 minutes from 7 a.m. to 9 p.m.) CARRIS BUSES: No. 5, 8, 22, 44, 45, 83 or by metro (red line, buying the " Viva Viagem" card, €0,50 along with the 1 hour Travel Ticket, €1,40).

There are regular direct trains to Aveiro from Gare do Oriente trainstation. Given the distance between Lisbon and Aveiro, it is best to use the fast train services (Alfa or Intercidades). The train journey from Lisboa-Oriente to Aveiro using the Alfa and Intercidades trains takes around 2h30m and costs up to €25. There is (at least) one train every hour from 6.00 AM to 9.30 PM. Click here for train timetables.

From Porto Airport by car
At the airport there are various car hire agencies. Follow the signs for the A1 motorway in the direction of Lisbon (there is a toll charge of around €3.5, and can be paid in cash or with a credit/debit card). Leave the A1 at the exit for Aveiro and take the A25. The University is near the hospital.
CONFERENCE LOCATION

From Lisbon Airport by car
At the airport there are various car hire agencies. Follow the signs for the A1 motorway in the direction of Porto (there is a toll charge that can be paid in cash is around €15 or with a credit/debit card). Leave the A1 at "Aveiro-Sul/Águeda" (exit 15) and take the EN235 directly to the city centre. The University is near the hospital.

By Train
As stated above Aveiro, is linked with all major cities in the rest of Portugal by the Alfa Pendular (between Lisbon and Braga; Lisbon and Oporto; Faro and Oporto) and Intercity (between Lisbon and Oporto as well as Lisbon and Guimarães) trains. Furthermore suburban links through the Urbanos do Porto and, also, the Linha do Vouga, a narrow gauge railway to Águeda and Sernada do Vouga. Aveiro railway station is located about 20 minutes walking distance or 5 minutes taxi ride from the University Campus. To reach the Campus, you can also use the bus (green line) which departs at regular intervals from outside the railway station.

By Bus
From Porto
There is no point taking the intercity bus from Porto to Aveiro as the journey is much longer, the fares are more expensive, and there are fewer departures.

From Lisbon
The intercity bus network is operated by Rede Expressos, and their fastest route takes 1h25, but some services take over 2 hours. An adult single fare costs €8.60 and a return is €15.40. Further information and the booking of tickets can be made on the Rede Expressos website. Rede Expressos buses depart from the Campo 24 de Agosto bus station, which is to the east of the city. The bus station is close to the 24 de Agosto metro station, and is only a short walk across the Jardim do Campo 24 de Agosto Park.

By Taxi
Taxis are available at the Aveiro train station. To calculate the price of a local taxi ride use this fare calculator.

- Taxis Rodrigues Aveiro:. Tel: +351 915 003 547
- TAXI 41, AVEIRO - Tel: +351 964 836 902

By Car
Aveiro is located 40 minutes away from Oporto, 2 hours from Lisbon (motorway A1) and only 2 hours from Spain (motorway A25).

- From north, using the A1 motorway, or from the east, using the IP5/A25, follow in the direction of Lisbon. Exit the A1 in the direction of Aveiro and take the IP5/A25. There are two exits to the city from the IP5/A25, first "Aveiro-Norte" and some kilometres further on, the "Aveiro" exit. This second exit is best for reaching the University of Aveiro (the University is near the Hospital).
- From the south, using the A1 motorway, follow in the direction of Porto. Exit the motorway at "Aveiro-Sul/Águeda" (exit 15) and follow the EN235 road directly to the University Campus (the University is near the hospital). From the south, using the A8 and A17 motorways, exit at "Aveiro-Sul" and follow the EN235 road directly to the University campus (the University is near the hospital).

These motorways have a system of electronic payment: please see the electronic toll website for more info.
## EUROYSIS upcoming Conferences

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<td>October 27-29, 2021</td>
<td><strong>Online Event</strong> Rome, Italy</td>
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<td><strong>SCIFI-IT'2022</strong></td>
<td>April 3-6, 2022,</td>
<td><strong>University of Leuven/Ghent Research Centre</strong>, Ghent, Belgium</td>
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<td><strong>FOODSIM'2022</strong></td>
<td>April 3-6, 2022,</td>
<td><strong>University of Leuven/Ghent Research Centre</strong>, Ghent, Belgium</td>
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<td><strong>ISC’2022</strong></td>
<td>June 1-3, 2022</td>
<td><strong>UCD Dublin</strong>, Ireland.</td>
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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

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Email:......................................................................................................................