

# FINAL PROGRAM



24 – 25 September 2020



universidade  
de aveiro



DigiMedia  
digital media and interaction  
research centre

**Aveiro, Portugal**  
**Organized and Sponsored by**



## PROGRAMME AT A GLANCE

**Due to COVID19 and the ensuing travel restrictions presentations will be onsite and/or online making GAME-ON 2020 a hybrid 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 2020 participants only on the EUROSIS website.**

### **Thursday September 24**

08.30-14.30 Registration  
 09.00-09.30 Onsite and Online Welcome  
 09.30-10.30 Keynote  
 10.30-11.00 Coffee Break  
 11.00-12.30 Session  
 12.30-13.30 Lunch  
 13.30-14.30 Keynote  
 14.30-15.00 Coffee Break  
 15.00-17.00 Session  
 17.00 end of Day 1

### **Friday September 25**

08.30-15.30 Registration  
 09.30-10.30 Keynote  
 10.30-11.00 Coffee Break  
 11.00-12.30 Session:  
 12.30-13.30 Lunch  
 13.30-14.50 Session  
 14.50-15.00 Coffee Break  
 15.00-17.30 Workshop  
 17.30-17.45 Closing Session  
 End of Conference

# GAME-ON'2020 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](mailto: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**

## Thursday, September 24, 2020

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'2020 General Conference Chair

### Opening of GAME-ON'2020

Ana Veloso, GAME-ON'2020 General Conference Chair

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

**09.30-10.30**

### Session Chairperson:

Liliana Costa, DigiMedia, University of Aveiro



### GAME\_KEY\_01\_ONL

**[Procedural Content Generation Techniques applied to Game Design and Development](#)**

Davide Gadia, Università degli Studi di Milano, Milan, Italy

## Thursday, September 24, 2020

10.30 - 11.00 **Coffee Break**

11.00 - 12.30 **DECA Auditorium/Online Room - SESSION II  
GAME DESIGN**

**11.00-12.30**

**Session Chairperson:**

Nelson Zagalo, DigiMedia, University of Aveiro

**GAME\_METH\_01\_ONL**

**Co-Creating Gamified Service Design - Case Gamified Airport Security Workshop**

Pirita Ihamäki and Katriina Heljakka ..... **5**

**GAME\_METH\_02**

**Designing a Mobile Game to Generate Player Data | Lessons Learned**

William Wallis, William Kavanagh, Alice Miller and Tim Storer ..... **13**

**GAME\_METH\_04**

**Towards the Creation of a Conceptual Framework in the Context of GAMERS4NATURE Toolkit to Game Design**

Pedro Beça, Mónica Aresta, Rita Santos, Ana Isabel Veloso ..... **16**

12.30 - 13.30 **Lunch**

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

**13.30-14.30**

**Session Chairperson:**

Mário Vairinhos, DigiMedia, University of Aveiro



**GAME\_KEY\_03\_ONL**

**[Evaluation of a VR system for Pain Management using Binaural Acoustic Stimulation](#)**

Francisco José Perales López, Catedrático de Universidad CCeIA, Dep. Matemáticas e Informatica, UIB, Palma de Mallorca, Illes Balears, Spain

**Thursday, September 24, 2020**

14.30 - 15.00 **Coffee Break**

15.00 - 17.00 **DECA Auditorium/Online Room - SESSION IV  
GAME MECHANICS AND PLAYER INTERACTION**

**15.00-17.00**

**Session Chairperson:**

Pedro Beça, DigiMedia, University of Aveiro

**GAME\_SER\_01\_ONL**

**Multi-Modal Study of the Effect of Information Complexity in a  
Crisis Management Game**

Paris Mavromoustakos Blom, Sander Bakkes and Pieter Spronck....**33**

**GAME\_SER\_02**

**From Learning Mechanics to Tabletop Mechanics: Modding  
Steam Board Game to be a Serious Game**

Micael Sousa and Joana Dias .....**41**

**GAME\_AFFECT\_01\_ONL**

**Exploring Peak-end Effects in Player Affect through Hearthstone**

Agner Piton, Paris Mavromoustakos Blom and Pieter Spronck .....**51**

**GAME\_STORY\_01\_ONL**

**Player Modeling for Role Playing Games**

Henrique Fernandes and Pedro A. Santos.....**57**

**FREE EVENING**

## Friday, September 25, 2020

08.30 - 12.30      **Registration**

09.30 - 10.30      **DECA Auditorium/Online Room - SESSION V  
KEYNOTE**

**09.30-10.30**

**Session Chairperson:**

Paulo Dias, DETI, University of Aveiro



**GAME\_KEY\_02\_ONL**

**[The Highs and Lows of Natural Language Learning Gamification](#)**

Maxim Mozgovoy, The University of Aizu, Aizuwakamatsu, Fukushima, Japan

10.30 - 11.00      **Coffee Break**

11.00 - 12.00      **DECA Auditorium/Online Room - SESSION VI  
REAL WORLD GAMIFICATION**

**11.00-12.00**

**Session Chairperson:**

Diogo Gomes, DETI, University of Aveiro

**GAME\_GAMIF\_03**

**Gamified App to promote Senior Cyclo-Tourism: A Pilot Study**

Cláudia Pedro Ortet, Ana Isabel Veloso and Liliana Vale Costa.....71

**GAME\_DES\_02\_ONL**

**Effects of Daily Routine on Students' SDT Needs Satisfaction: A Pilot Study towards developing a Digital Gamified System**

Sanaul Haque, Daire O'Broin and Joseph Kehoe .....79

12.00 - 13.00      **Lunch**

## Friday, September 25, 2020

### 13.30 - 14.50 DECA Auditorium/Online Room - SESSION VII AI IN GAMES DESIGN

13.30-14.50

**Session Chairperson:**

Carlos Santos, DigiMedia, University of Aveiro

**GAME\_AI\_01\_ONL**

**How to make a Horror Game Scary: A Case Study**

Yuan Tu and Maxim Mozgovoy .....23

**GAME\_AI\_03**

**Evaluating Clustering Methods Underpinning Content Generation in Games using GANs**

Gabriel Lacey and Ruth E Falconer .....26

**GAME\_GAMIF\_01\_ONL**

**Gamified Doll-Dramas: Provocations, Playbor and Participatory Play Practices in the Age of iTV**

Katriina Heljakka and Pauliina Tuomi .....67

14.50 - 15.00

**Coffee Break**

### 15.00 - 16.30 DECA Auditorium/Online Room - SESSION VIII WORKSHOP

15.00-16.30

**Session Chairperson:**

Luis Pedro, DigiMedia, University of Aveiro



**WORK\_01**

**Using Modern Board Game Mechanisms to develop Simple Analog Serious Games**

Micael Sousa, University of Coimbra, Coimbra, Portugal

### 16.30 - 16.45 DECA Auditorium/Online Room - SESSION XII CLOSING SESSION AND BEST PAPER AWARD

16.30-16.45

**Session Chairperson:**

Ana Veloso, DigiMedia, University of Aveiro

Óscar Mealha, DigiMedia, University of Aveiro

Philippe Geril, EUROSIS-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 2021 FIRST ANNOUNCEMENT



**SEE YOU ALL NEXT YEAR AT  
GAMEON 2021  
September 22-24, 2021, De-  
partment of Communication  
and Art, [University of Aveiro](https://www.ua.pt/),  
Aveiro, Portugal**

**Proposals for special  
tracks/tutorials/demos can be  
sent in by January 30<sup>th</sup> 2021**

# CONFERENCE LOCATION

## Conference Venue



[University of Aveiro](http://www.ua.pt)

DeCA auditorium

Department of Communication and Art

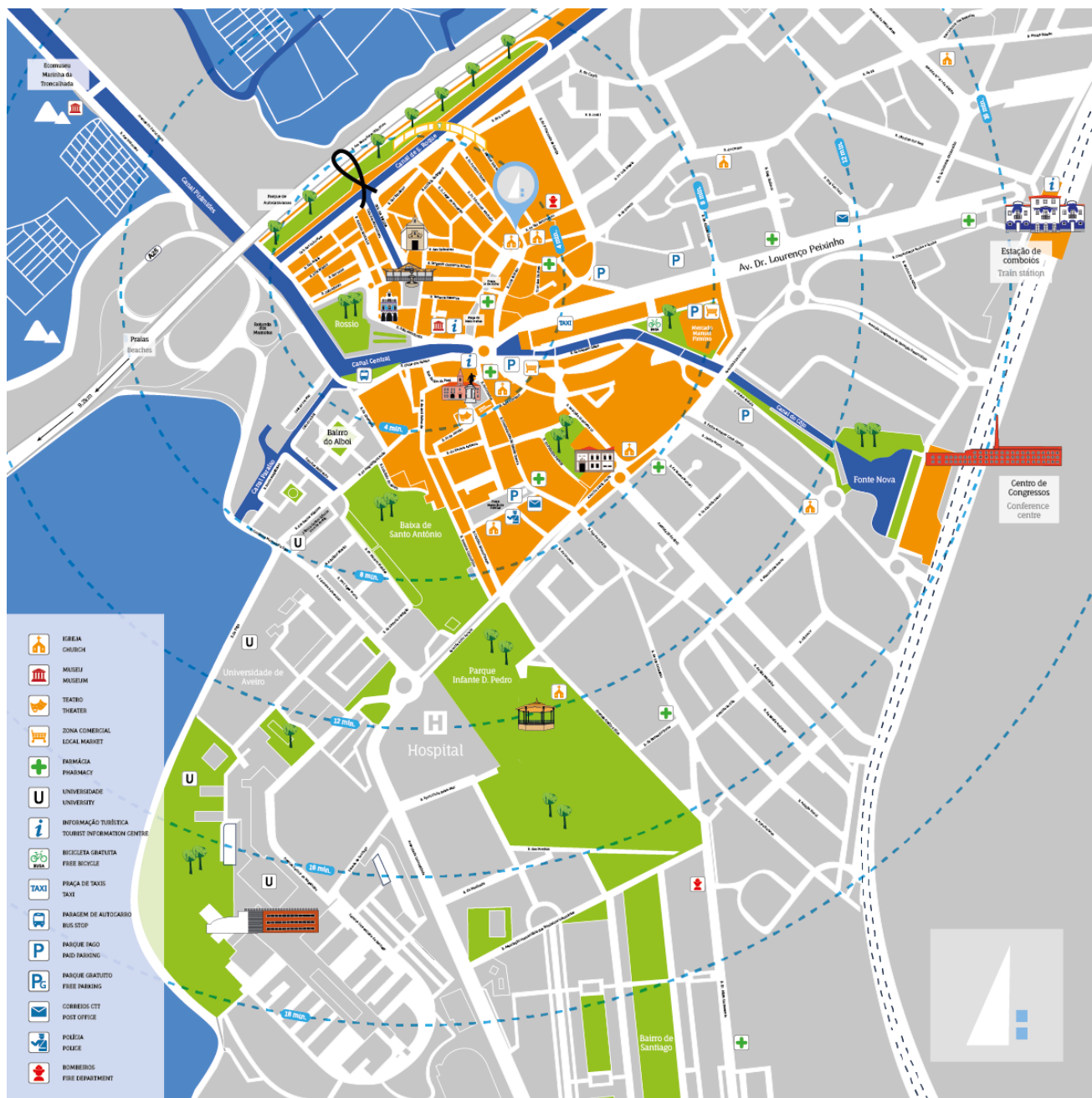
Campus Universitário de Santiago

3810-193 Aveiro

Tel. : +351.234.370.389

Email: [lilianavale@ua.pt](mailto: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.



## EUROSIS upcoming Conferences



### **ISC'2021**

June 2-4, 2021,  
[University of Malta](#),  
Valletta, Malta



### **ESM'2021**

October 2021  
[Link Campus University](#)  
Rome, Italy



### **ISC'2021**

June, 2021  
[UCD Dublin](#)  
Dublin, Ireland



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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**EUROSIS-ETI**  
**European Simulation Office**  
**Bluebridge - Ostend Science Park**  
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