



**L-Università ta' Malta**  
Institute of Digital Games



**[DRAFT] Report on the  
Activities of the Institute  
2013-2020**

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## Highlights

- Msc in Digital Games: **Top 25 Game Design Schools** – *Princeton Review*: **16<sup>th</sup>** place in 2020 (up from 23<sup>rd</sup> place in 2017)
- We have published more than **168 papers** since 2013
- IDG research has received more than **13,000 citations (collective h-index: 130)**
- IDG members attracted over **5 million Euro** of research funding to UM since 2013.
- IDG participated in projects worth of **30 million Euro** in total
- We have delivered more than **120 Keynotes** and Invited Talks
- IDG has received **11 awards** for papers in top-tier conferences and journals and for games we designed
- IDG grew from 4 members to **25 members** within 7 years of operations.
- Synergies with **14 different UM departments**, faculties, and institutes.
- Released **4 games** which received broad exposure outside of project deliverables
- 3 Alumni have **released games** that have been nominated or won **awards**
- **Launched new premises and increased industry collaboration**

## MSc in Digital Games

The Institute of Digital Games has been ranked amongst the **top 25 post-graduate programmes** for *Game Design* by the **Princeton review** in **2017, 2018, and 2019**. We have achieved our goal to reach the top of the list rising 7 spots in the ranking from 23<sup>rd</sup> to **16<sup>th</sup>** in **2020**.

Our MSc has grown substantially and over the course of the first 5 years it has managed to maintain a healthy intake (with respect to numbers and student quality). In 2012 (under MaKS) we started with 5 students but we have since then managed to receive a minimum of around 15 applications a year (we reached a new peak in 2019). See figure 1 - IDG student admissions for the detailed numbers. After a decline in applications the Institute has revised its communications and outreach strategy, this has clearly paid off dividends as the applications have increased to near the highest point in its short history. We're looking to build on the existing communications strategy and increase applications over the coming years. The Institute's marketing strategy paid off and resulted in more applications of better quality. However, many of the applicants were international and due to the increased risk associated with moving abroad, coupled with the late deadline of the University of Malta, many declined or were unable to make the move to Malta (due to visa constraints as well as time and financial limitations). Responsiveness and student guidance are areas where we must improve in order to meet our goal to increase our global reputation.

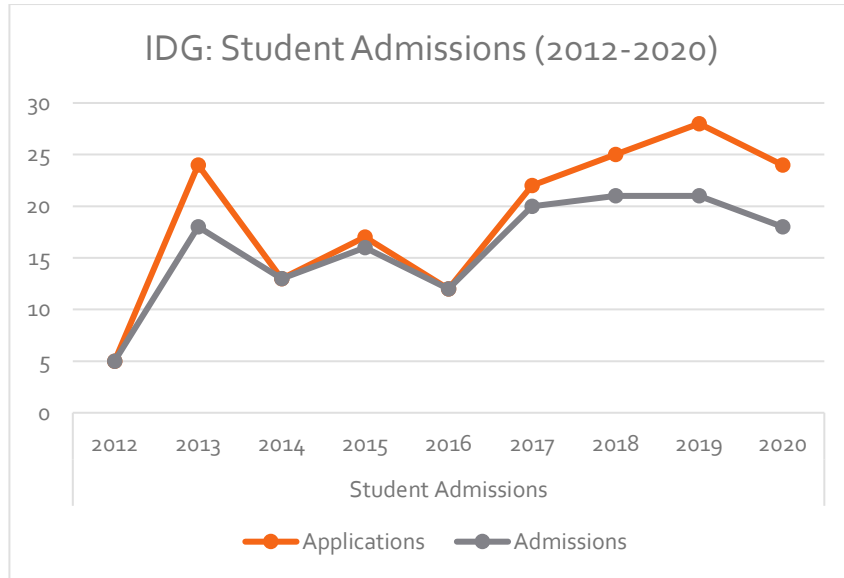


FIGURE 1 - IDG STUDENT ADMISSIONS

Due to Covid-19, we expected a lower amount of applications. Outreach events were reduced, and students are more hesitant to make a move abroad (and we are also experiencing restrictions in travel overall). Many of our students tend to be international, so it was expected the pandemic would impact the Institute heavily in this aspect. We are pleased to note that we have **53% increase in local applications in 2020**. Regardless, we still received 25 applications in 2020 which is still near our usual numbers over the past few years.

Comparatively to other Institutes at the University the Institute of Digital Games still manages to attract a significant amount of students.

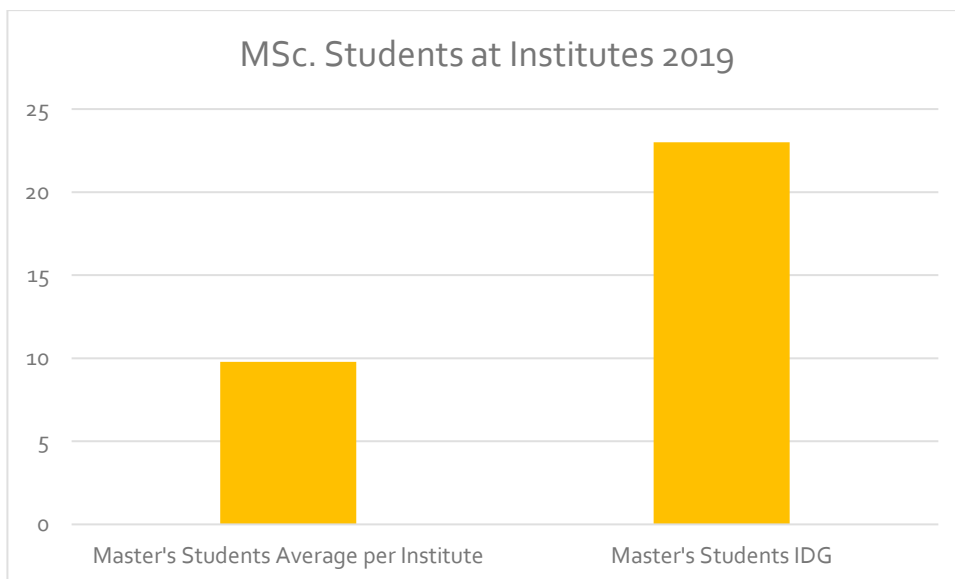


FIGURE 2 - MSc STUDENTS AT INSTITUTES<sup>1</sup>

**Looking ahead**, one of our principal goals is still to increase the amount of applicants to the MSc with a view on eventually capping at 30 rather than 20 students. The Institute attracts enough quality applicants to be able to take in 20 high-quality students, however we feel there is a need to improve the quality and timeliness of the feedback provided students regarding their admissions status. We feel the need to foster and mould our future PhD track from the cohort of students that are more interested in an academic path than an industry one. In 2017, we've taken our first step, however more applicants are required for us to achieve our targets in quantity and quality.

## Institute's Growth

An important indicator of a healthy and sustainable research environment is the number of researchers that have been employed at the institute over the years. While back in 2013 the Institute started its operations with **4 resident academics** and a teaching assistant, nowadays it hosts **25 members**: 6 resident academics, 1 assistant lecturer, 2 visiting scholars, 3 postdoctoral fellows, 8 PhD students, 5 research support officers and 1 clerk.

## Publications

The staff at the Institute have been prolific in their research ventures over the years. Since 2013, IDG staff has collectively managed to publish a total of **168 peer-reviewed publications**.

In particular, we have published

- 3 Books
- 6 Edited books
- 31 Book chapters
- 46 Journal articles
- 154 Conference and workshop papers

Please see the Appendix A: Publications for 2013-2020 for a full list of the Institute's research output.

The Institute has a healthy publication output. We estimate that the University of Malta has published 4710 papers (between 2013 and 2015) and the IDG has 128 of these. This results in a very high ratio of papers to academics. Comprising about 0.6% of the University's academics (Counting only resident academics)<sup>2</sup> and the IDG produced about 3% of the University's total papers.

The research published by the IDG is on the cutting edge of game technology and game analysis and is reflected in the venues where the articles are published. The measurable

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<sup>1</sup> Source Registrar's Office

<sup>2</sup> UM had on average 933 resident academics and an average of 738 visiting academics between 2012 and 2016. The IDG has an average of 5.3 academics in the same period (not counting 2012 as the IDG was not set up yet).

impact of IDG's work is reflected by **over 13,00 citations** (Google Scholar, Nov 2019) that its academic members and research associates have received collectively. It is also important to note that Prof. Georgios Yannakakis is the academic with the **highest h-index** (52) at the University of Malta (Google Scholar, Jan 2020). Collectively the IDG members contribute substantially (via citations and h-index counts) to the ranking of the UM in the European and the global educational setting.

## Keynotes

Over the last 7 years IDG members have been invited to give **over 30 keynote talks** in top-tier international conferences and **over 100 invited talks** in various meetings, events, and academic institutions across the globe. Please refer to Appendix B: Invited Talks for 2013-2020 for a detailed list of Keynotes and other Invited Talks.

## Awards and Honours

IDG researchers have won the following awards.

- **Best Paper Award:** G. N. Yannakakis, R. Cowie, and C. Busso, "The Ordinal Nature of Emotions," in *Proceedings of the Seventh International Conference on Affective Computing and Intelligent Interaction (ACII)*, 2017.
- **IEEE Transactions on Affective Computing -- Most Influential Paper Award:** G. N. Yannakakis and J. Togelius, "Experience-Driven Procedural Content Generation," *IEEE Transactions on Affective Computing*, vol. 2, issue 3, pp. 147-161, 2011. (Selected from **168 papers published during the 5 first years** of the journal.), 2015
- **Best Paper Award:** A. Liapis, C. Holmgard, G. N. Yannakakis, and J. Togelius, "Procedural Personas as Critics for Dungeon Generation," in *Proceedings of Applications of Evolutionary Computation*, 2015.
- **Stibo-Foundation Award** for doctoral studies (**96000 DKK**) – for the doctoral work of Christoffer P. Holmgard.
- **Best Paper Award:** A. Liapis, G. N. Yannakakis, and J. Togelius, "Designer Modeling for Sentient Sketchbook," in *Proceedings of the IEEE Conference on Computational Intelligence and Games*, 2014. IEEE.
- FP7 Marie Curie CIG *AutoGameDesign* project ranks **1<sup>st</sup> out of 1102** grant proposals across all disciplines with an evaluation score of 97.2 out of 100, 2014.
- **IEEE CIS Outstanding TCIAIG Paper Award** for the paper: N. Shaker, G. N. Yannakakis and J. Togelius, "Crowdsourcing the Aesthetics of Platform Games," *IEEE Transactions on Computational Intelligence and AI in Games*, vol. 5, issue 3, pp. 276-290, 2013.
- **European Learning Game of 2013 Award:** The SIREN Game. Games and Learning Alliance (GALA) Network of Excellence, 2013. (Rilla Khaled was the lead designer of the game; Georgios Yannakakis and Antonios Liapis contributed to the design).
- **Best Student Paper Award:** A. Liapis, G. N. Yannakakis, J. Togelius: "Towards a Generic Method of Evaluating Game Levels," in *Proceedings of AAAI Artificial Intelligence and Interactive Digital Entertainment Conference (AIIDE)*, 2013.
- **Best Paper Award:** A. Liapis, G. N. Yannakakis, J. Togelius: "Enhancements to Constrained Novelty Search: Two-Population Novelty Search for Generating Game

Content,” *Proceedings of Genetic and Evolutionary Competition Conference (GECCO)*, 2013.

- **Runner-up Best Student Paper Award:** A. Liapis for “Data-driven Design: A Case for Maximalist Game Design” at *International Conference of Computational Creativity*, 2018.

## Notable award nominations

The game *Will Love Tear Us Apart* was nominated for a Webby Award - Games Category in 2014, an Experimental Award at SXSW Interactive in 2014 and an Innovation Award at the Festival Du Cinema Nouveau, Montreal, in 2013.

The work of Yannakakis, Liapis and Martinez has collectively been nominated **three more times** for a best (IEEE CIG 2013 and IEEE CIG 2020), an outstanding (ACM ICMI 2014) paper award.

## Funded Projects

IDG researchers have managed collectively **to attract more than 5 million Euro** to fund their research activities at UM by coordinating or participating in research projects of over **30 million Euro** in total.

FIGURE 3 - FUNDS ATTRACTED

The IDG has established a strong background in research which has enabled them to attract several significant research projects, in part due to their high-calibre PhD students and the prominence of existing researchers. Furthermore, the IDG is open to collaborating with the various different and interrelated departments of the University to ensure that their projects have the right skillset and involve the right stakeholders. An example of this, is the recent collaboration with the ICT department in the high profile eCrisis project, where game-based learning will be used to foster the development of social, civic and intercultural competences such as conflict resolution, creative thinking, and reflective debate in primary and secondary education students.

Source: UM

The strength of the IDG in attracting funding for the University is particularly evident when taken on a per academic basis. With an average of 5.3 academics over the 2012-2020 period the IDG has managed to attract 5 million in funding or just over **909k per academic**.

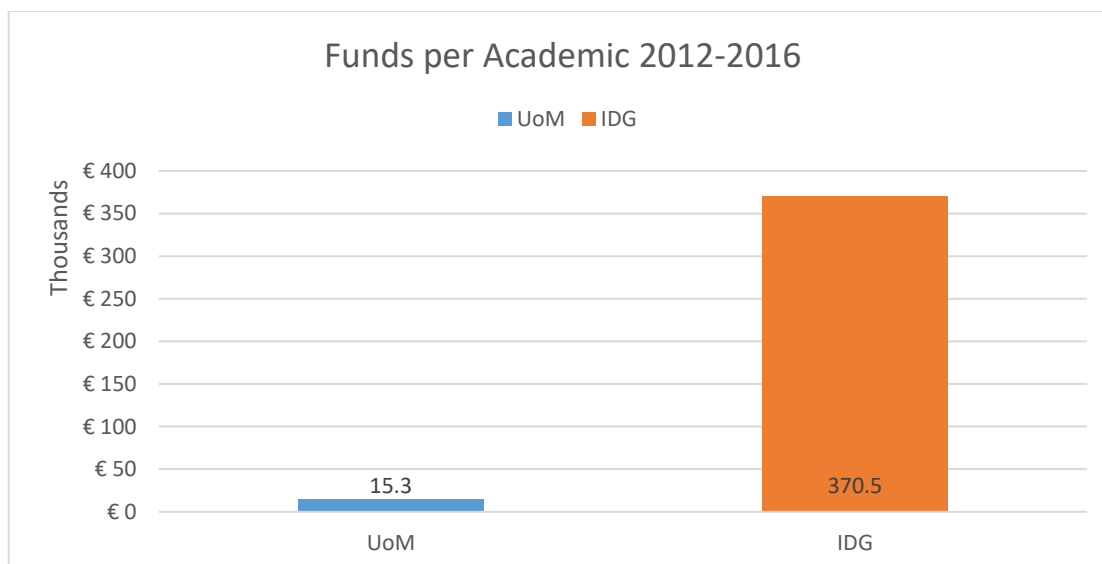


FIGURE 4 - FUNDS PER ACADEMIC

## Completed and Ongoing

The following is a list of IDG funded projects that are completed, currently ongoing or pending a review:

### Completed

- Rilla Khaled has been awarded and completed the **FP7 Marie Curie CIG REFLECT project (€100k for UM)** from 2013 – 2017.
- Georgios Yannakakis managed and completed the **FP7 ILearnRW project (€430k Euro for UM)** which run from 2012 – 2015. Other involved researchers: Rilla Khaled and Hector Martinez.
- Georgios Yannakakis managed and completed the **FP7 C2Learn project (€520k Euro for UM)** which run from 2012 – 2015. Other involved researchers: Mirjam Eladhari, Antonis Liapis and Phil Lopes (PhD student).
- G. Yannakakis and A. Liapis coordinated and completed the University of Malta Research Innovation and Development Trust project **Deep Design (€7k for IDG)** which run from 10/2016 to 10/2017
- IDG was part of **EUCROMA project** (2012 – 2013) which is part of the MEDIA Programme, Story Worlds education, involving cooperation between several European Universities.
- Stefano Gualeni, Marcello Gómez Maureira, Philip Bonanno manage **FORETELL: Flood and Fire Safety Awareness in Virtual Worlds**. Project Partners: Hellenic Open University in Greece, Felcos Umbria in Italy, University of Malta, and the Fire Safety and Civil Protection Directorate in Bulgaria. Total budget: **€243k**
- S. Gualeni is the main investigator for University of Malta Research Fund project: **'GAMe Design as a TrAnsformative Practice'** ('GADTAP')
- Gordon Calleja managed the **GoGoGozo Erasmus+ project**. Project partners: University of Malta, the University of Manchester, Warwick University, Utrecht University and Palacký University Olomouc. Total budget: **€210k**.

- Georgios Yannakakis has been awarded and completed the **FP7 Marie Curie CIG AutoGameDesign project (€100k for UM)** which run from 2014 to 2018. The application was ranked 1<sup>st</sup> out of 1102 proposals in the EU.
- Georgios Yannakakis has coordinated and completed the **Reach High AutoSemanticGame project (€200k for UM)** which was awarded to the postdoctoral fellow Owen Sacco. The project will run from 2016 to 2019.
- Under management of Georgios Yannakakis IDG completed an industry research collaboration between the Institute of Digital Games and Massive: A Ubisoft Studio regarding player motivation for Tom Clancy's the Division 2.
- Antonios Liapis completed the *Green Home* project for the Malta Energy and Water Agency. **€10k**
- G. Yannakakis and A. Liapis managed and completed the **H2020 Envisage Project**. Project Partners: Centre for Research & Technology Hellas (GR), Ellinogermaniki Agogi (GR), goedle.io Gbmh (DE), Aalborg University (DK). Total budget: **€215k for UM**
- Georgios Yannakakis coordinated and completed the **eCrisis Project: Europe in Crisis**. Project Partners: University of Malta, National Technical University of Athens, Univeristy of Vienna, Ellinogermaniki Agogi, and St. Ignatius College. Total budget: **€136k**
- G. Yannakakis and A. Liapis managed and completed the **H2020 CrossCult project**. Project Partners: Luxembourg Institute of Science and Technology, Centre Visuel de la Connaissance sur l'Europe, Universidad de Vigo, Universidad de Peleponnese, University College of London, University of Malta, Centre National de la Recherche Scientifique, The National Gallery London, Technological Educational Institute of Athens, GVAM, Universita degli studi di Padova. Total budget: **€291k for UM**

## Ongoing

- G. Yannakakis and Antonios Liapis manage the PrismArch project, a H2020, Research and Innovation action. Total budget: 1,928,062. **Budget for UoM: € 327,500**
- G. Yannakakis manages AI4Media, a H2020 Research and Innovation Action. Total budget: 11,999,722. **Budget for UoM: 287,500**
- K. Makantasis was awarded Marie Curie IF for TAMED. Total budget: 160,049. **Budget for UoM: 160,049.**
- G. Yannakakis coordinates the RSSD Research Excellence Fund FRAME (ReFRAMing MachinE Learning via Ordinal Tensors and Deep Quality Diversity). **Budget for UoM: €55,000**
- G. Yannakakis manages the **Com N Play-Science project**, a H2020 SwafS, Research and Innovation Action. Funded with an evaluation score of 14.5/15. Total budget: 3,344,590 Euro. **Budget for UM: € 242,500**
- G. Yannakakis coordinates the LearnML Erasmus Project. Project Partners: National Technical University of Athens (GR), Korais Educational Enterprises Sa (GR), The Science Centre at the Directorate for Learning and Assessment Programmes (MT), Norwegian University of Science and Technology (NO). Total budget: 449,995 Euro. **Budget for UM: € 150,000**
- S. Gualeni is the coordinating the **CURIO** Erasmus project which runs until end of 2018. Total Budget: **€120K (38K for UM)**

## Funded Projects contributing to IDG and UM indirectly:

- In 2016 and 2017 the Institute has secured funding from the Art Fund to bring prominent industry professionals to speak at the Game Jam and to judge the award of the Malta Digital Game Fund. Furthermore, assigned IDG staff was mentoring the teams involved.
- Gordon Calleja secured an Art Fund grant to develop the *Posthuman* game.
- Rilla Khaled and Pippin Barr: *Initiative for Indigenous Futures*. SSHRC Partnership Grant funded at CAD\$2.5M for 7 years. Role: Co-investigator. (Principle investigator: Dr. Jason Lewis.)
- Rilla Khaled. Internal Concordia fund: *Reflective Game Design* (2015 — 2017)

## Under review

- All members of staff have been and are currently involved in numerous project proposal applications. The Institute receives a great deal of invitations to join project consortia showcasing its establishment and recognition in the European game research scene.

## Centre of Research Excellence

As a postgraduate institute, the Institute of Digital Games ranks at **16<sup>th</sup> in the world** by the Princeton Review, however, in terms of game research the institute is in the top 10 (**8<sup>th</sup> place currently**) according to [IREG Observatory on Academic Ranking and Excellence](#). We are proud to have **hosted and trained** some of the **most influential researchers** in the field of game technology that now hold prestigious positions in other universities or in the industrial sector. Indicatively, Dr Christoffer Holmgaard, a postdoctoral fellow with the H2020 Envisage project was recently appointed Assistant Professor at the College of Arts, Media and Design, at the Northeastern University. Dr Phil Lopes, a PhD student of IDG secured a position as a postdoctoral researcher at the University of Geneva a few months before his PhD defence. Dr Hector Martinez, a postdoctoral fellow with the FP7 iLearnRW project is a lead data scientist at Massive Entertainment (Ubisoft Studio in Malmo, Sweden). Dr Amy Hoover, a postdoctoral fellow with the FP7 C2Learn project is now Assistant professor at the New Jersey Institute of Technology. Finally, Dr Antonios Liapis, a postdoctoral fellow of IDG with the FP7 C2Learn project is now a Lecturer at IDG.

## Research Excellence Recognition

In addition to the general rankings and the success of the PhD students and postdoctoral fellows there are a number of recognitions in 2020 which have served to illustrate the leading position of the Institute as a world-class research centre. Prof. Georgios Yannakakis has, for the second time, been listed in the Guide2Research annual ranking for top scientists in the area of computer science and electronics. With an h-index of 52, Prof. Yannakakis is featured as the only Maltese researcher on the list, which is dominated by scientists from the United States. He has also been invited to join the editorial team of IEEE Transactions on Evolutionary Computation - the top ranking journal for Machine Learning and Artificial Intelligence research with an impact factor of 11.1. His appointment is testament to the progress, esteem, and ultimately the impact of the

research being undertaken at the University of Malta in particular to the areas of evolutionary computation and machine learning at large.

10 members of the academic staff of the University of Malta have featured in a list of the top two per cent of the world's scientists recently. The database was curated by a team of experts at Stanford University, USA, and was published last October in one of the most reputed journals, *PLOS Biology*. The report lists some 100,000 scientists whose published research manuscripts have accelerated progress in their respective fields and influenced the productivity of other researchers. Prof. Yannakakis was ranked in the top 2% of the extremely competitive field of Computer Science.

In terms of industry application, the institute has been productive with Prof. Yannakakis and students having **two patents approved**, one for a game bot generation together with Christoffer Holmgård Pedersen (IDG Alumnus), Lars Henriksen, Benedikte Mikkelsen, Sebastian Risi, Niels Orsleff Justesen, and Julian Togelius and one for an algorithm that models user experience together with Christoffer Holmgård Pedersen (IDG Alumnus), David Melhart (IDG PhD Student), and Lars Henriksen.

## Artificial Intelligence Research Group

“Ever since the birth of the idea of artificial intelligence, games have been helping artificial intelligence (AI) research progress. Games not only pose interesting and complex problems for AI to solve, they also offer a canvas for creativity and expression which is experienced by their users. Thus, arguably, games are a rare domain where science (problem solving) meets art and interaction: these ingredients have made games a unique and favourite domain for the study of AI. But it is not only AI that is advanced through games; games have also been advanced through AI research. AI has been helping games to get better on several fronts: in the way we play them, in the way we understand their inner functionalities, in the way we design them, and in the way we understand play, interaction and creativity.”

Yannakakis and Togelius, *Artificial Intelligence and Games*, 2018. Springer Nature



FIGURE 5 - PROF. YANNAKAKIS ON AI-PANEL AT CEBIT CONFERENCE ON SERIOUS GAMES ALONGSIDE DR. CHRISTIAN THURAU (TWENTY BILLION NEURONS) AND ANETTE KOEHE (BOSCH IOT)

The AI research group at the Institute of Digital Games is performing cutting edge research at the crossroads of AI and games pushing the boundaries of the field with innovate work being published in top-tier journals and conferences. In addition to academic research supported by European and national funding, the Institute’s AI research group also collaborates actively with industry giants such as Ubisoft.

Researchers of the AI research group have had their work awarded at numerous conferences and competitions in the field of computer science, particularly as relates to: artificial intelligence, machine learning, affective computing, creative computing, and player modelling.

The AI research group currently consists of 13 researchers: the team is co-directed by Prof. Georgios Yannakakis and Dr Antonios Liapis and involves postdoctoral fellows (Dr Kostantinos Makantasis, Dr Iro Voulgari, Dr Daniele Gravina), PhD Students (David Melhart, Emil Kastbjerg, Manolis Xylakis, Marvin Zammit, Chintan Trivedi) and Research Associates (Matthew Barthet Kostantinos Sfikas, Lara Caruana Montaldo).

## Digital Humanities Research Group

The Digital Humanities Research Group at the University of Malta tackles topics at the intersection of digital technologies and subjects in the humanities, such as philosophy and literature. This crossroads is the natural home of digital games, as they are – by their very nature – multidisciplinary, combining art, music, writing and design with cutting-edge digital technology, and engaging with philosophical, literary and aesthetic concepts in the language of computation. As such, game scholars often find themselves doing research at exactly the crossroads referred to as “digital humanities”.

Videogames are one of the key forms in today's cultural landscape, taking their place alongside more established forms like theatre, film, TV, literature and performance art. Their impact is something we take seriously at the Institute of Digital Games. The Digital Humanities Research Group examines what games are, what they do, and how we experience them. Current research threads include tracking and mapping the differences in representation between traditional fiction and virtual reality, the player-avatar relationship in games, architecture and the built environment in game worlds, music and musicking practices in games, and the use of videogames as philosophical tools.

As part of this initiative, there is a monthly get-together for discussing any and all critical or academic texts with a special relevance to game studies and digital humanities, organised by Dr Daniel Vella.

The Digital Humanities Research Group currently consists of 7 researchers, including Prof. Stefano Gualeni, Prof. Gordon Calleja, Dr. Daniel Vella, Dr. Costantino Oliva, Renata Ntelia, Melinda Sue Borg, and Dr Krista Bonello Rutter Giapponne.

## Research Visitors

Over the last 5 years the institute has managed to attract the interest of several academics, researchers and PhD students that spent some considerable time in Malta collaborating with members of the Institute. Most notably we had the following visits

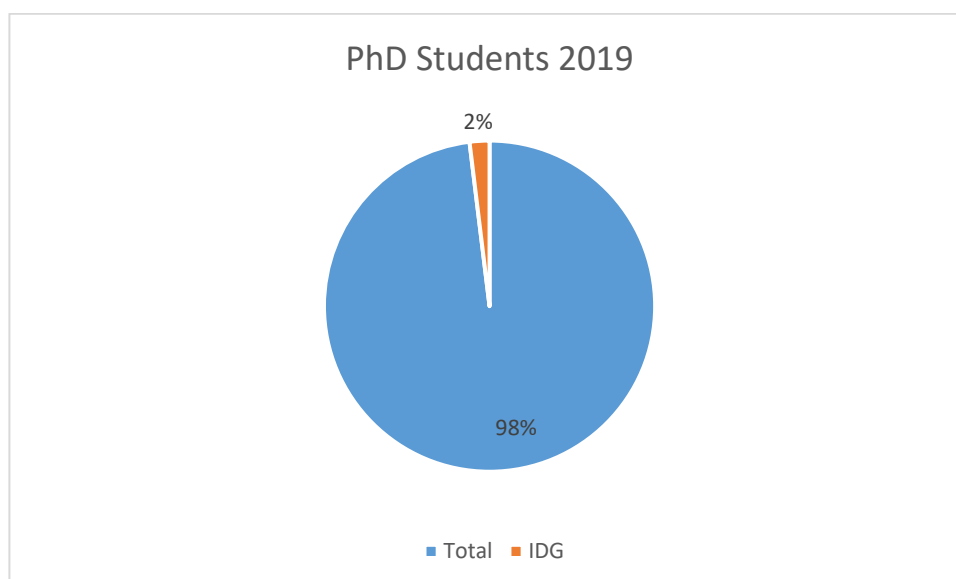
- **3 Sabbaticals:**
  - Prof. Thomas P. Runarsson, University of Iceland, Iceland (2014);
  - Dr Carlos Martinho, INESC-ID, Portugal (2014),
  - Prof. Jean Claude Martin, Paris South University (2013).
- **3 Academic Erasmus Visit:**
  - Prof. Mark Grimshaw from Aalborg University.
  - Prof. Alan Meades from Canterbury Christ Church University
  - Dr. Jaroslav Svelch from University of Bergen
- **8 Extended Research Visits:**
  - Claire Dormann from Ottawa University (2014)
  - Nicholas Ward from University of Limerick (2014)
  - Michelle Westerlaken Malmö University (2017)
  - Ricardo Chalmeta from Universidad Jaume I (2018)
  - Mike Cook (2018; University of Falmouth's Games Academy)
  - Nele van de Mosselaer (2018; University of Antwerp)
  - Ivan Rokošný (2018; Trnava University)
  - Jan Proner (2018; Trnava University)
- **6 Visiting PhD students:**
  - Mario Madureira Fontes (2015; Pontifical Catholic University, Brazil),
  - Christoffer Pedersen Holmgaard (2014; IT University of Copenhagen),
  - Antonis Liapis (2013-2014; IT University of Copenhagen),
  - Eva A. Alblas (2015; Behavioral Science Institute of the Radboud University of Nijmegen)
  - Nele van de Mosselaer (2020; University of Antwerp)
  - Cristiana Pacheco (2020; Queen Mary University, UK)

- **1 Fullbright Scholar** – in 2021 we're expecting to host a Fulbright Scholar, Theresa Devine (Arizona State University)
- **Foreign Industry Visitors:** Jon Gibson, Studio Head, Electric Square (UK), Nathan Gouveia, Studio Production Director, Electric Square (UK), Patryk Grzeszczuk, Marketing Director, 11Bit Studios (Poland) Tomasz Kisiliewicz, Art Director, 11Bit Studios (Poland), Maciej Binkowsky, Lead Game Designer, Techland (Poland), Emily Short, IF Writer (UK), Alexis Kennedy, CEO and Designer, Failbetter Games (UK), Kasia Resiuk, Art Director, CD Projekt Red (Poland), Meg Jayanth, award-winning games writer (UK), Rob Morgan, Games Writer and Creative Director of Playlines AR (UK), Aksel Kjøie, CEO Step In Books (Denmark), Mink Ette, Escape Room Designer (UK)

## PhD Students

As a centre of research excellence we receive a considerable amount of requests for students to do their PhDs with us from Malta and elsewhere. We have established our PhD board and **we currently have 8 PhD students (Manolis Xylakis, Marvin Zammit, Chintan Trivedi, Renata Ntelia, David Melhart, Melinda Sue Borg, Emil Kastbjerg, Stefano Caselli)**. We also have **one PhD student (Jessica Rose Marcotte) affiliated with Concordia** University and supervised by Rilla Khaled and another PhD student (Jean Michel) affiliated with Dakar University and co-supervised by Georgios Yannakakis and Antonios Liapis. Due to the extensive research conducted and the large amount of publications in high impact journals we are able to attract high-quality PhD students and this is an area that could lead to greater international recognition for the Institute.

Demonstrating the strength of our PhD programme is the amount of PhD students the Institute has when compared globally to the Academics at the University of Malta. When taking into account both Resident and Visiting Academics the IDG makes up less than 1% of the total academics, however has 2% of the total PhD students.



Finding sources of income (on top of the local scholarships) for such students to sustain themselves while in Malta is necessary. Right now we are restricted to local students and foreign students that have the resources to be self-financed for the three years or that have a scholarship from another country. The extension of our PhD programme depends strongly on the funds available (which we try hard to obtain from EU and national resources). There is now 100,000 EURO in scholarships available to our students from the MDIA. **PhD training is a core focus of the Institute.**

### The EPSRC Centre for Doctoral Training in Intelligent Games and Game Intelligence (IGGI)

We have also undertaken another initiative to attract good PhD students to Malta and put our name on the map regarding doctoral education. The Institute of Digital Games is part of the **EPSRC Centre for Doctoral Training in Intelligent Games and Game Intelligence (IGGI)** <http://www.york.ac.uk/news-and-events/news/2013/iggi/> This is a program in PhD training in game technology/design coordinated by York University, Goldsmiths and Essex (involving many companies and Universities in Europe). Being partners in this program means that in the next 5 years IDG will host a number of PhD students for different periods, co-supervising their activities.

### International AI Doctoral Academy (AIDA)

The Institute and the University as a whole will also be affiliated and part of the **International AI Doctoral Academy (AIDA)** that is currently supported by 5 large-scale H2020 projects (including AI4Media)<sup>3</sup>. AIDA will launch its doctoral programme in 2021.

### Local Industry Scholarships and Collaboration

Furthermore, the Institute has strengthened its connection with GamingMalta which now also has digital games under its remit. The Ministry for Financial Services, Digital Economy, and Innovation has also expressed interest in developing our collaboration with industry and providing industry-oriented scholarships.

The visibility of the Institute's research results in many academics and occasionally industry experts looking to visit the Institute to have face-to-face time with the IDG faculty. The University Communications department have assisted in filming a set of short interviews with our research visitors available in a playlist on our social media.

## The Institute and the Rest of the University

Although we have been very busy setting up the Institute during the first two years, we have made our best efforts to contribute to other parts of the university. We feel that by now we have built good bridges with several faculties and institutes on both research and teaching fronts. Below we give an account of our members' interactions and intra-University networking, to give a sense of the spread and reach we have managed to cover so far.

### Courses Taught Outside IDG

- Costantino Oliva has been teaching the "Introduction to Digital Game Studies" study unit, 4 ECTS, **MaKS**. Taught in full from 2013 to 2015.

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<sup>3</sup> <http://155.207.4.33/wordpress/> (early draft webpage of AIDA)

- Costantino Oliva has been teaching the "Game Design and Conceptualisation" study unit, 4 ECTS, **MaKS**. Taught in full in 2015-2020.
- Costantino Oliva has been contributing to the "Communication Overview" and the "Professional Practice" study units, **MaKS**. 7 hours guest lecture each year from 2013 to 2015
- Costantino Oliva has taught a guest lecture on the MA of Fine Arts in Digital Arts and delivers several lectures on the Introduction to Game Design course at the **Faculty of ICT**. Costantino also supervises students from **MaKS**.
- Georgios Yannakakis and Antonios Liapis have been teaching parts of two undergraduate courses on the Artificial Intelligence Department, **Faculty of ICT** throughout the five years of the Institute.
- Antonios Liapis gave a level design seminar in the **Department of Built Environment**, UM (2015).
- Daniel Vella gives 3 undergraduate and graduate courses (*Practical Criticism*, *Synoptic Study-Unit 2* and *Electronic Literature*) in the **Department of English** since 2014.
- The analysis strand of our MSc in Digital Games is also offered as an elective to the **MA in Media and English Programme**.
- The courses *Game Artificial Intelligence* and *Affective Computing* of our MSc in Digital Games are also offered as an elective to the **MSc in Signal Processing and Machine Learning, Faculty of ICT**.
- Several of IDG members have taught and currently teach on **MaKS' "Communication Overview"** course.

## Supervised Theses outside IDG

- Stefano Gualeni has supervised a Master's thesis at the **Faculty of Built Environment**
- Georgios N. Yannakakis has supervised 3 Bachelor Theses and an MSc thesis at the **Faculty of ICT**.
- Gordon Calleja has supervised 3 Bachelor's Theses for the **Department of English**.
- Costantino Oliva has supervised a Bachelor's Theses for **MaKS**
- Hector Martinez supervised a Bachelor's thesis at the **Faculty of ICT**.
- Mirjam Edlahari has supervised an MSc thesis at **MaKS**.

## Other Connections to the University

- Stefano Gualeni is working with the **Department of Physics** and the **Edward de Bono Institute** on the CURIO Project.
- Stefano Gualeni is also working with the **Edward de Bono Institute** on a collaboration for the abstract for the Spheres Journal (volume 6).
- Stefano Gualeni provided the Keynote for the Edward de Bono Institute Erasmus+ CREMO Project Workshop 'Philosophy with (and within) the Digital'.
- Daniel Vella Daniel worked on 2 papers with Krista Rutter Giapone of the Dept. of English. One of the papers was accepted for DiGRA 2018.
- Daniel Vella, Stefano Gualeni, and MSc Student Johnathan Harrington collaborated with **the Department of Theatre Studies** on a paper concerning de-rolling in virtual worlds.
- Costantino Oliva collaborating with Giselle Spiteri Miggiani of the **Department of Translation, Terminology & Interpreting Studies** to pilot a Video Game Localization course under their Master's programme. Also available as elective to MSc. In Digital Games students.

- 3 MSc students assisted the **Faculty of Medicine and Surgery** in the development of an educational game on the BioBank.
- Rilla Khaled has been in contact with the **Faculty of Education**, where she approached the Dean and Vanessa Camilleri and offered to provide structured games-related modules to them.
- Rilla Khaled, Hector Martinez and Georgios Yannakakis have been discussing collaborations with Albert Gatt and Ray Fabri from the **Institute of Linguistics** under the iLearnRW project.
- Georgios Yannakakis, Antonios Liapis and Amy Hoover have been contacted the **Department of Computer Science, Faculty of ICT** (Prof. Pace and his team) to discuss about potential teaching and research collaborations.
- Georgios Yannakakis has given two talks at the **Faculty of Engineering**: one organised by the IEEE Student Branch and one organized by the Department of Mechanical Engineering.
- Antonios Laipis has been discussing with Xu JingYao of the **Department of Built Environment** and Sandra Mifsud of the **Performance Studies in Dance** on collaborating in projects
- Georgios Yannakakis and Antonios Liapis collaborate with Vanessa Camilleri from the **Faculty of ICT** in the context of the **eCrisis Erasmus+ project**.
- Stefano Gualeni is collaborating with the **Cognitive Sciences Department** in the context of a Marie S. Curie H2020 application.
- Stefano Gualeni gave a talk at **MaKS – Communication Department** in Nov 2015
- Gordon Calleja has given talks at the **Department of English** (Narrative and Games) in 2013 and at the **School of Performing Arts** (Presence and Immersion, Alice and Games) in 2014 and 2015.
- Rilla Khaled Co-taught a motion-controlled games workshop: she invited Sandra Mifsud from the **School of Dance** and her dance students to attend a design workshop she organized at the IDG co-taught by Rilla and Nicholas Ward from the University of Limerick on motion-controlled games.
- Rilla Khaled gave a guest lecture for Gorg Mallia's class *Communications: An Overview*.

## Academic Conferences

Prof. Georgios Yannakakis and Dr. Antonios Liapis were, respectively, the Program Chair and the Local Chair of the *IEEE Conference on Computational Intelligence and Games* (2016). Liapis has also been the organizer of the second AIIDE workshop on Experimental AI in Games (2015) and the fifth FDG workshop on Procedural Content Generation in games (2015). Rilla Khaled co-organised a CHI PLAY 2014 Workshop: Participatory Design for Serious Game Design: Truth and Lies. In May 2013 we organised (Georgios Yannakakis was the general chair; Rilla Khaled was the game design track chair) one of the largest conferences in game research, the *Foundations of Digital Games Conference*, part run and sponsored by Microsoft. The University of Malta had the largest number of accepted papers from any university worldwide. Our great showing there included delivering several papers, running workshops and seminars, demonstrating a game (Love will Tear us Apart) and playing a major role in the event's organization and in its reviewing. As a result Microsoft Research have approached us to

potentially become one of the institutions they use to service their various game development studios.

## Philosophy of Computer Games 2016

IDG members Daniel Vella and Stefano Gualeni have successfully submitted an application to host the 10<sup>th</sup> edition of the International *Philosophy of Computer Games Conference*, that was held on Malta in 2016. This is a long-running and world-leading international conference series that is being brought to Malta for the first time, attracting leading scholarship in this exciting field.

## Foundations of Digital Games 2020 (FDG20)

The Institute of Digital Games with Dr Antonios Liapis and Prof. Georgios Yannakakis as General Chairs, organized one of the leading academic conferences on digital games, the Foundations of Digital Games. Due to the covid-19 pandemic, the conference was forced into a virtual format. As organisers, the Institute made sure to showcase Malta as a central hub for videogame research with FDG-TV and the reminder that it was broadcast live from Malta. The International Conference on the Foundations of Digital Games (FDG) is an interdisciplinary conference on technology used to develop digital games, and the study of digital games and their design, where academics can present their work to a diverse audience, share new ideas, and find collaborations with different backgrounds.



The banner for the FDG<sup>20</sup> conference features a red and white color scheme. At the top left, the text 'FDG<sup>20</sup>' is displayed in large white letters on a red background. To the right is a circular logo with a yellow background, a blue eye, and a black game controller. Below this, a white portrait of Deirdre Quarnstrom is shown on the left. To her right, the text 'DEIRDRE QUARNSTROM' is written in bold red letters. Below her name, a red horizontal bar contains the word 'KEYNOTE' in white. Underneath that, the text 'BACK TO SCHOOL WITH MINECRAFT' is written in bold red letters. At the bottom, a black horizontal bar contains the text 'SEPTEMBER 15-18. ONLINE FROM MALTA' in white.

FIGURE 6 - TEAM-LEAD OF MINECRAFT EDUCATION, HOUR OF CODE AND DIRECTOR OF BLOCK BY BLOCK

FDG revolves around presentations of peer-reviewed papers, invited talks by high-profile industry such as Zynga, King, and Microsoft, as well as academic leaders, interspersed with panels, demos and workshops. Approximately 200 leading game researchers attended the virtual conference taking place 15-18th September.

## Ludomusicology 2020 (Ludo2020)

Ludomusicology 2020 was also scheduled to be held in Valletta in April with the Institute of Digital Games and Dr. Constantino Oliva as local organiser. However, due to circumstances,

the Ninth European Conference on Video Game Music and Sound was also moved to an online format. The Ludomusicology Research Group leading the conference is an inter-university research organization dedicated to the study of game music founded in 2011. The conference establishes game music as a significant research area alongside academic musicology, act as a hub or point-of-contact to advertise the research of the group members (and of other academics working in the field) and serve as a general attempt to create a coherent direction and body of knowledge for this sub-discipline.

## Events

We have been active with organizing several game events, all of which drew a very positive response. We have run the **Malta Global Game Jam seven times** (2014-2020) and also organised the **Mediterranean Game Jam** for the first time in Malta in 2015. In both events participants meet and form teams to make a game in 48 hours. All events were very successful in bringing further (local and international) attention to our educational program and our research agendas. Game Jam events also resulted in the presence and praise of designers and directors of AAA video game properties, such as Techland and Projekt CD Red.



FIGURE 7 - PROMOTIONAL POSTER FOR GAME JAM 2018

The Institute has participated in **all six Science in The City events** since its establishment. The iLearnRW project disseminated results at both the **Notte Bianca** and the **Science in the City** events during 2014. That year several games were also exhibited at the central library in Valletta giving IDG significant outreach in Malta. The Institute participated at the EU corner of the **Science in the City 2015, 2016, and 2017**, in which latest results from the *AutoGameDesign* project were presented to the general public. In 2018 the Institute

showcased the MAZING game used in PhD student David Melhart's research on affective computing.



FIGURE 8 - RESEARCHERS EXPLAINING WORK DONE UNDER AUTOGAMEDESIGN PROJECT AT SCIENCE IN THE CITY

In 2014 Gordon Calleja was involved in running an exhibition based on the *Love will tear us apart* game at St James Cavalier during **Notte Bianca** and **Science in the City**, where the Institute and University were promoted. The Institute was also present as Science at the Citadel in Gozo in 2018. These public appearances are an important part of Institute's work since they allow people to find the institute in the educational landscape and open the public's mind to the possibility of a career in digital games.

In 2019 and 2020 the Institute organised the Global Game Jam Next for the first time in partnership with the Directorate for Educational Services of the Ministry for Education and Employment. The game jam was targeted to a younger audience than the standard game jam the institute has been organising since 2013. In addition, to the student participants, the parents were also provided information on the benefits of games and well as potential career avenues in video games.

## International Events

Part of our international outreach strategy was to hold international workshops and conferences on a regular basis. In 2013 we (Gordon Calleja and Daniel Vella) started a new conference series that was very well received called *Games and Literary Theory*, together with the Department of English and ITU Copenhagen. The conference went very well and attracted over 50 participants.

During the first 5 years, members of IDG have been involved in the organizing committees of the top-tier conferences in games research and have been editors of top-tier scientific journals. Prof. Georgios Yannakakis became Associate Editor, IEEE Transactions on Games. In 2018 and continues as Executive Board Member of the Association for the Advancement of

Affective Computing (AAAC). He was also the Program Chair of the 2019 IEEE Conference on Games, London.

The IDG has been making key partnerships in Japan. Japan, arguably pioneered console gaming and have a dynamic games industry that is mostly unknown to most Western game scholars. Therefore, the IDG Director Prof. Yannakakis is co-organizer: **NII Shonan Meeting** (Dagstuhl Seminars in Japan), *Artificial General Intelligence in Games: Where Play Meets Design and User Experience*, 2019.

Industry is a clear partner in the research conducted by the IDG and this has been recognized by Prof. Yannakakis's involvement as co-organizer: **AI and Games Summer School**, in partnership with DeepMind, Ubisoft, Unity, Spriti.ai, and Yokozuna Data, Chania, Greece 2018, in New York in 2019 and in Copenhagen in 2020.

## Gamescon and Playcon

Gamescon is a massive event showing that videogames are a massive industry with a broad range of roles and a vibrant ecosystem from indie to AAA. Malta's participation an essential step to gaining a stronger foothold in the industry. Participating in contributing education and research in [gamedesign](#), [artificial intelligence](#), and [game analysis](#), the University and the Institute of Digital Games was invited to join the GamingMalta delegation to Cologne in 2019 and showcase the world-class education that companies could tap into should they be interested in setting up a studio in Malta. The event further strengthened industry ties of the institute of research both locally and internationally.

The Institute of Digital Games was also represented at Playcon, together with more than 30 exhibitors were present during the first Esports and Game Development Expo with over 8 tournaments happening at the same time. On Friday the GameDev and Esport Summit welcomed 40+ local and foreign speakers, including Prof. Georgios Yannakakis.

## Games for Change

The Institute of Digital Games with the support of GamingMalta, participated in the virtual Games for Change festival. Prof. Stefano Gualeni and Jasper Schellekens were panellists, together with other local videogame studios, such as Playmagic and Dorado Games, on nurturing talent in the Mediterranean. The Institute provided an overview of the games education with a focus on the potential for games to effect and inspire change.



## Malta Digital Games Scene

The Institute is engaged with the local digital game scene, participating as a partner in the Creative Industries Platform currently run by the Malta Video Game Studio Association (MVGSA) and International Game Developers Association Malta Chapter (IGDA Malta). This Platform supports the export of video games developed in Malta and is an aspect of putting Malta on the map as a place of excellence in video game design and development. Institute of Digital Games was also happy to welcome the Trojan Horse was a Unicorn event in Malta as it will help develop the necessary expertise to draw more video game studios to Malta as they can be assured of the quality of the local resources.

GamingMalta is doing excellent work in attracting videogame industry to Malta and with this the potential for research and the viability of videogames as a career and sector for research and innovation will develop further.

## Public lectures

In spring 2014 we initiated a regular **series of game lectures** from international experts in academia and industry which have helped with our reputation as an international hub in games.

More importantly, the game lecture series provide an added value to local institutions and industry as well as researchers and students. Due to the multi-disciplinary nature of the game lectures, they will be split into academic and industry talks, so that the interested stakeholders can participate more effectively.

## Academic Seminars

The Academic Seminars make sure we get the most out of the many researchers and academics that visit the Institute from around the world. Academics from every field that touches upon games and come to visit the Institute to get inspired and exchange ideas also

are requested to provide some insight into their current research. The Seminars are open to the public, but targeted mainly at University students and academics interested in enhancing their knowledge in that particular area of research. Since the Institute is multidisciplinary this can range from philosophical to technical, but always with the focus on games.



FIGURE 9 - DR JAROSLAV SVELCH (UNIVERSITY OF BERGEN) PRESENTS HIS RESEARCH ON MONSTERS IN GAMES

Dr. Daniel Vella also organises a reading group which can complement the academic seminars. The reading group is a monthly get-together for discussing any and all critical or academic texts with a special relevance to game studies. For each meeting, a member of the reading group will suggest a text for everyone to read before the session, and then moderate and lead the discussion for that session. The reading group is a useful venue for discussing published or in-progress work, for discussing a text you're reading, or for keeping up with new publications in the field.



FIGURE 10 - READING GROUP

## Industry Talks

Industry talks are also open to the public, but are targeted to professionals in the industry in addition to students and staff in the field of game design. These talks are in the evening to make it more convenient for professionals to attend and cover the more practical aspects of game design that would appear to the professional community and public in general. This would include presentations by game studios and post-mortems on the development of games.

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## Consultancy – Advisory Roles

Gordon Calleja has been a board member of the **National Audiovisual Strategy** and advisor at the **Contemporary Art Museum**, the **Malta Arts Council** and the **Malta Game fund**. He has also been the curator and co-organiser of **the Indie Games Exhibition** at the Science in the City and Notte Bianca events.

Stefano Gualeni was hired by the **Malta Arts Council** over summer 2015 to analyse and reform its Digital Game Fund grant, how it is awarded, and how its output in terms of quality and visibility can be maximized and validated.

Antonios Liapis provided mentoring and consultancy to the finalists of the Malta Digital Games Fund in 2016, 2017 and 2018. The consultancy will be provided on an ad hoc basis as requested by the finalists and will allow the studios to benefit from impartial feedback on their process and ideas as well as insight and troubleshooting.

The Institute of Digital Games assisted in identifying high-profile, quality judges to judge the award of the **Malta Arts Council Digital Game Fund**. Winners were announced in January 2016 during an event organised by the IDG.

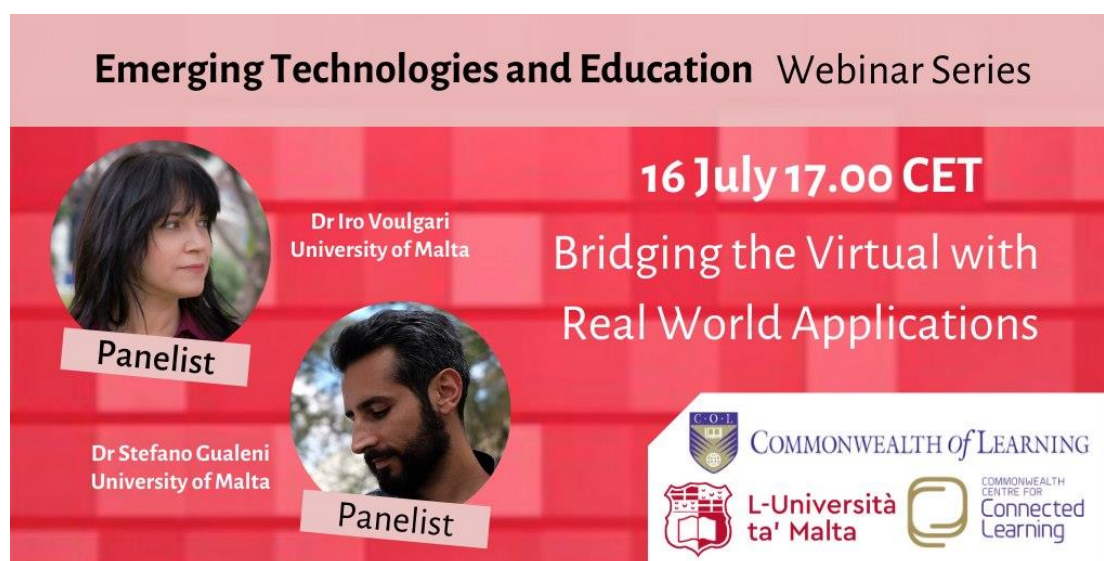
In 2019 Dr Costantino Oliva from the Institute of Digital Games served as advisor for the arts-based research project "GAPPP: Gamified Audiovisual Performance and Performance Practice", at the University of Music and Performing Arts of Graz, Austria. The GAPPP project explores computer game elements in the realm of audiovisual composition and performance.

## Lectures outside UM

Over the course of the three years we have given lectures at several educational institutions in Malta. We have given several lectures at Giovanni Curmi Higher Secondary, MCAST ICT, Junior College, MCast Art and Design Institute, MCast Engineering, and MCast Technology. These talks are given on a **yearly basis** since 2013. We have also participated through Pippin Barr in judging St Martins' game development challenge. We have participated in the Ernst & Young Generate event in 2018 and 2019 with hundreds of secondary school students visiting the stand. We will be soon making an appearance at the Junior College Career Expo in January 2020.

## Commonwealth of Learning – Emerging Technology Webinars

Dr. Iro Voulgari and Prof. Stefano Gualeni presented in a webinar series organised in collaboration with the Commonwealth of Learning and the Commonwealth Centre for Connected Learning. There they spoke about the cultural significance and impact of games as well as the power of harnessing them for educational purposes. During the pandemic this is an important outreach for countries of the Commonwealth and will hopefully open the doors for more international collaboration and interest from students throughout the Commonwealth.



**Emerging Technologies and Education Webinar Series**

**16 July 17.00 CET**

**Bridging the Virtual with Real World Applications**

**Panelist**  
Dr Iro Voulgari  
University of Malta

**Panelist**  
Dr Stefano Gualeni  
University of Malta

**COMMONWEALTH of LEARNING**  
**L-Università ta' Malta**  
**COMMONWEALTH CENTRE FOR Connected Learning**

## Notable Game releases

In 2013, we got major exposure in popular media across the globe through the incredible success of Pippin Barr's art games, particularly his being signed up by Marina Abramovic to make a series of games for her soon to be open art institute. Abramovic is one of the most famous and respected artists of our time. Pippin Barr's fame has also been very positive for us, with his inclusion of the Institute and University's name in the interviews and articles he's been part of over the year. Pippin Barr was nominated by Harpers magazine as **one of the top ten upcoming artists in the world**.

*Will Love Tear Us Apart* (Calleja, Oliva) was **covered by over 300 sites all over the world** including major art, music and cultural magazines like Rolling Stone, NME, Fact, Kotaku, Polygon and many others. Gordon Calleja also gave interviews on podcasts and radio stations worldwide. This obviously created a lot of fame that translated to Institute's and UM's fame.

*Posthuman* (Calleja) was another major success internationally. It is one of the hottest board games out there at the moment in the thematic game genre. Aside from having **pre-sold 8500 copies before it has actually hit the shops**, it is being reviewed by all major board game outlets giving a lot of prominence to Gordon Calleja as a boardgame designer and the Institute and UM by association.

*Postuman Saga* (Calleja) the follow up to *Posthuman* launched on Kickstarter and was fully funded within 48 hours, raising a total of 304,000 US dollars from backers.

In 2020, "Construction BOOM!" a satirical boardgame developed by Stefano Gualeni received some national attention and is an example of how games can be used for different purposes, such as activism and education. In 2017 Stefano Gualeni developed *Something Something Soup Something* (PC, MAC, Unix) at the IDG with the support of MaltCo Lotteries in collaboration with Isabelle Kniedsted, Marcello Gómez Maureira, Johnathan Harrington, Riccardo Fassone, and Jasper Schellekens. The game received a large amount of press coverage, including a feature on one of the largest game-related websites: *Kotaku*.

*HERE* (2018) - Available at [here.gua-le-ni.com](http://here.gua-le-ni.com), developed with Rebecca Portelli, Diego Zamprogno, and Riccardo Fassone.

The game *What We Did* co-designed by Rilla Khaled and Pippin Barr got significant exposure through several write ups of the game in "top-tier" online game sites, including: KillScreen and Rock Paper Shotgun.

## Alumni – What happens after the MSc.

The Institute was founded in 2013 and as a two-year programme has had its first graduating class in 2015. Therefore, we are very proud of the work completed by our alumni after graduating from the M.Sc. in Digital Games or after completion of the PhD with the Institute.

As a multi-disciplinary programme our alumni roles vary greatly, but we pride ourselves in the way they are able to adapt readily in a competitive work environment and offer more than their role and pursue their own initiatives as well as contribute to large scale triple A projects.

Our records indicate that 93% of our graduates are currently employed, we have not managed to track the remaining 7% whose employment we cannot confirm. Approximately 50% of the graduates are employed in the game industry. Although we would like this number to be higher we must also consider that should the graduates decide to stay in Malta their opportunities may be limited and that furthermore as a multi-disciplinary Master's they may return to the expertise acquired during the undergraduate years and not necessarily need to continue in the games industry.

Notable Companies and Academic Institutions that have hired our students: CD Projekt Red, Creative Assembly, Sony Interactive, Dorado Games, University of Geneva, University of Malta

In addition to companies hiring graduates, our graduates also go on to set up their own companies together with academics from other leading universities. Modl.ai was set up by

Christoffer Holmgard (PhD student) and has recently managed to attract \$1.7M in seed financing.

Some of the most notable achievements by our alumni include:

- “... and then we held hands” - 2014 Golden Geek Best Print & Play Board Game Winner – David Chircop (Class of 2015)
- Principal Designer for Rome 2, Attila and Total War: Warhammer – Stylianos Avramidis (Class of 2015)
- “Ariana’s Magical Journal” – top five of projects selected by Malta Information Technology Agency for full development funding – Isabelle Kniestedt (Class of 2017)
- “Lil’ Arena” – Greenlit on Steam - Konstantinos Vasileiadis and Tall Guy Productions (Class of 2019)

## International Traineeships

The International Office of the University and the Institute are also working closely to provide Erasmus+ traineeships to our students. A key part of this is for the institute to network with industry partners and encourage them to take on interns. Although, this would mean that the internships would happen abroad, the fact that the interns are paid via Erasmus will open up doors of opportunities, allowing students to make the trip abroad with some expenses covered and also allowing companies to take on an intern without the additional paperwork and expenses. These traineeships are available to our students up to one year after graduation.

The institute is also making an effort to host trainees from abroad that can assist with the ongoing research at the Institute of Digital Games. This year we have welcome our first Erasmus+ Traineeship which is helping with the promotion and research of Prof. Stefano Gualeni’s game *Construction BOOM*. We hope to take advantage of this Erasmus mobility in the future to bring more students over for limited project work.

## Educational activities outside Malta

Pippin Barr has been lecturing at the Department of Design and Computation Arts, of Concordia University both at 2013 and 2015. He has so far organized and completed the courses *Game Studio I*, *Networks & Navigation* and *Curious Games Studio*.

Stefano Gualeni has been visiting professor at the Laguna College of Art and Design (LCAD) summer course Game Design Theory Methods since 2016. He was joined this year with a guest lecture from another IDG professor, Gordon Calleja. LCAD is also ranked among the top 25 programmes in game design.

Furthermore Prof. Gualeni is also a visiting Scholar at the University of Gothenburg in Sweden.

Note that most IDG members have given several guest lectures/talks **outside Malta** promoting the Institute of Digital Games and UM (see Appendix B for further details).

Costantino Oliva has had a departmental meeting with Aalborg University, Department of Communication and Psychology in order to explore the possibilities of an Erasmus+ agreement in between the two institutions. An Erasmus + agreement under consideration is with Ritsumeikan University in Japan, as the gap between digital games in the East and the

West particularly as concerns research is quite substantial. In order to bridge this gap, the IDG is already participating in a number of conferences in Japan this summer. The UM already had a PhD student from Ritsumeikan visit and follow a number of study units during their time here.

The Institute of Digital Games has set up a number of Erasmus agreements outlined below:

Student and Staff exchanges with:

- University of Koln, Germany
- University of Trnava, Slovakia
- University of Applied Sciences, Vienna, Austria
- Bahcesehir University Istanbul, Turkey

Staff exchanges with

- Universitat Jaume I, Spain
- Lille University, France

## Summary and the Future

Overall we aim to further strengthen the reputation of the Institute internationally through our professional service, publications, collaborative projects and conference appearances and continued activities in the organization of prominent conferences, such as the conference on the *Philosophy of Computer Games* in November 2016 which was brought to Malta for the first time and in Foundations of Digital Games which was held in Malta for the first time in 2020. The Institute operates in several fields The Institute of Digital Games with the continued support of both the University of Malta as a whole and the government ministries is on track to be a world-class games research institute.

Therefore, we will continue to plan in the long term anticipating the development of the education, research and games and ensuring that we remain on the cutting edge and that the University of Malta and the IDG are synonymous with excellence in education and research.

Working across all educational institutions in Malta, the Institute of Digital Games together with GamingMalta is driving the establishment of a Unity Centre of Excellence. This is a key starting point to train local talent and thereby increase both the viability of future research as well as future economic development of videogames on the island.

## Future Directions

Long-term priority areas remain:

### Quality and quantity of MSc students

The top item on our priorities list is increasing the amount of quality Masters-level game students. Toward that end we have invested in the marketing through the Princeton Review top 25 ranking. We have also invested in targeted advertising through StudyPortals, which after follow-up has resulted in a large increase in visibility and confirmed registration of at least one student. We will continue this investment until we are confident that the quality and programme have enough renown to draw students on reputation alone. In 2020 we have secured the assistance of GamingMalta who will help us launch a dedicated campaign to

attract foreign students. The campaign was also delayed due to the covid-19 pandemic, but is now scheduled to launch end of 2020 to target students looking to start in fall of 2021.

Our methods have been successful in increasing the amount of students, however as we have plateaued around the 20 mark, we are expanding our outreach to new Universities. We are approaching the career advisory services and the international office of Universities. The career advisory services will be able to guide interested students to our programme and provide information at the universities themselves for the students to peruse at their leisure while they are at University. The international offices will be able to coordinate studying abroad, both for students who are looking for a short stint abroad as well as those students that are particularly interested in continuing their education abroad. The IDG is also working on strengthening communication with the University of Malta's international office to ensure we are providing them with enough information and to ensure that we can assist them reach out to international students in the most effective way. The International Office has supported the Institute in setting up new Erasmus agreements, which will also help to bring students in from abroad. They have also assisted our MSc students with Visa complications for internships abroad at AAA studios. This type of support is critical as the strength of our alumni should be cultivated and experience at AAA studios can raise our student profile.

Jasper Schellekens has also represented the University of Malta, Institute of Digital Games at a stand at the Athens Game Festival in October 2017 and 2018 and Playcon and Gamescon in 2019. Leading to the generation of many leads for possible projects and student prospects.

Furthermore, IDG has strengthened collaboration within the University of Malta to attract students from the university and the IDG plans on continuing this intense communication and collaboration internally to ensure students are aware of the quality education that is available to them locally.

In 2019 the IDG was able to attract **a record number of applications**, however the students that actually register is still significantly lower than the total number of applications. This shows the increase in visibility resulting from the Institute's work, but also shows us that we need to be on top of the application process to ensure that foreign students – a large part of our applicants- **need to be informed even faster of the University's decision** and perhaps require more support for their transition.

## Quality and quantity of PhD students

The second area of emphasis has traditionally been a campaign to create and strengthen our PhD programme. We have been head-hunting candidates we felt are going to be future stars in their field both locally and abroad and find ways to help fund their studies with us. Since a number of other countries (indeed most) offer much healthier scholarships than Malta offers we will need to source funding for this and/or create some sort of internal scholarship provided by the University. Funded projects are one potential source of income that we are already tapping into, but these are so far covering technology positions. It is far more difficult to come by in Humanities and Design areas. We would, however, like to keep a balance in our disciplinary roots, so some legwork has to be done to find potential funding sources for these areas.

Note that our very first PhD graduate, Phil Lopes, has started a post as a **postdoctoral fellow at the University of Geneva** a few months before he defended his thesis. Dr Lopes' career

development is indicative of the emphasis we put on graduate education and the supervision quality we offer as an Institute.

## Premises – Launch of New Premises



FIGURE 11 - HON. SILVIO SCHEMBRI SPEAKING AT THE INAUGURATION OF THE NEW PREMISES

Parliamentary Secretary for Financial Services, Digital Economy and Innovation Hon. Silvio Schembri inaugurated the new premises of the Institute of Digital Games at the University of Malta yesterday. A full-day celebration of games research and education followed the inauguration with a series of quick-fire talks from a wide range of disciplines utilising games for research and education in the Institute and throughout the University.

Addressing over 100 attendees taking part in the event, the [Parliamentary Secretary emphasised that the government is aiming to position Malta as a major hub for the videogame sector](#) and the expansion of the institute is the next appropriate step toward further supporting the sector.

Prof. Alfred Vella, Rector University of Malta, highlighted the importance of meeting the needs of industry and harnessing the power of games for education adding that “we have a world-class post-graduate research institute right here where we stand today. Digital games are not a single discipline and the institute works together with the departments throughout the whole University”.



FIGURE 12 - DR GABRIEL ROBERT LEAD GAMEPLAY PROGRAMMER AT UBISOFT HIGHLIGHTED THE IMPORTANCE OF ACADEMIC RESEARCH TO GAMEPLAY INNOVATION THROUGH THE INSTITUTE OF DIGITAL GAMES AT THE UNIVERSITY OF MALTA

The diversity attending the event was encouraging for the future of the games industry in Malta and also provided a great opportunity for various industry stakeholders to get together and share their ideas and areas of expertise planting the seeds for future working together on future projects. The event was a clear indication that videogames have the potential to not only drive an economic industry, but also drive educational and technological innovation to new heights and Malta is well-placed to harness this through the Institute of Digital Games at the University of Malta.

## Summary

In summary we feel that we have been extremely productive in terms of research, teaching and public service, as well as establishing ourselves as one of the most prominent game centres worldwide. We have grown Malta's reputation in both academic circles and the industry, as we have heard from leading figures in both areas in every event we participate.

Having been ranked in the top 25 of post-graduate Game Design Programmes by the Princeton Review for four years in a row has put the Institute on the map as one of the best game design programmes in Europe and is helping us penetrate the consciousness of undergraduates in Europe and elsewhere that might be interested in our MSc. This is evident from the increase in interest and applications. We still are, however, having a hard time penetrating the consciousness of undergraduates in Europe and elsewhere that would be well-placed in applying for our MSc programme. As a notable example ITU's programme has been shrunk, with a number of courses removed and students accepted reduced from 75 to 50 per year. They still receive over 150 applicants a year and a considerable number of those hail from the Mediterranean and Eastern Europe, which we could be attracting if we had more marketing reach. We clearly have a programme that is solid and it is a matter of continuing to

communicate this and this is one of our major concerns and what we are focusing most of our efforts on currently.

## Appendix A: Publications for 2013-2020

### Books (3)

1. Gualeni, S. & Vella, D. (2020). *Virtual Existentialism: Meaning and Subjectivity in Virtual Worlds*. Basingstoke, UK: Palgrave Pivot.
2. Yannakakis, G. N., & Togelius, J. (2018). *Artificial Intelligence and Games*. New York: Springer Nature.
3. Gualeni, S. 2015. *Virtual Worlds as Philosophical Tools: How to Philosophize with a Digital Hammer*. London (UK): Palgrave MacMillan

### Edited Volumes/Special Issues (6)

1. Bjorn W. Schuller, Lucas Paletta, Peter Robinson, Nicolas Sabouret, and Georgios N. Yannakakis, *Intelligence in Serious Games, Special Issue at the IEEE Transactions on Computational Intelligence and AI in Games journal*, 2017.
2. Antonios Liapis, Georgios N. Yannakakis, Michael Cook, and Simon Colton, *AI-based and AI-assisted Game Design, Special Issue at the IEEE Transactions on Computational Intelligence and AI in Games journal*, 2017.
3. K. Karpouzis and G. N. Yannakakis, *Emotion in Games: Theory and Praxis*, Springer, Fall 2015.
4. G. N. Yannakakis, A. Paiva, K. Isbister and K. Karpouzis, *Emotion in Games*, Special Issue at the IEEE Transactions on Affective Computing journal, 2014.
5. Thawonmas, R., Togelius, J., & Yannakakis, G. N. (2019). *Artificial General Intelligence in Games: Where Play Meets Design and User Experience*.
6. Liapis, A., Yannakakis, G. N., Cook, M., & Colton, S. (2019). Guest Editorial Special Issue on AI-Based and AI-Assisted Game Design. *IEEE Transactions on Games*, 11(1), 1-4.

### Book Chapters (31)

1. Calleja, G., "Game Narrative: An Alternate Genealogy" in *Digital Interfaces in Situation of Mobility*, edited by Bernard Guelton, Common Ground Press (2017).
2. Calleja, G., L. Herrewijn and K. Poels, "Affective Involvement in Digital Games", in *Emotion in Games: Theory and Praxis*, Edited by Georgios Yannakakis and Kostas Karpouzis, Springer (Forthcoming in 2016).
3. Calleja, G. "The End: Aesthetic and Ludic Topoi in Digital Entertainment", in *The End: Terminus in Literature, Media and Culture*, Edited by Brian Russell Graham and Robert W. Rix (with Alessandro Canossa), Aalborg University Press (2013).
4. Calleja, G., "Incorporation: A Renewed Understanding of Virtual Environment Habitation", *Oxford Handbook of Virtualities: History and Heritage in Virtual Worlds*, Edited by Mark Grimshaw, Oxford University Press, USA (2013).
5. Calleja, G., "Ludic Identities and the Magic Circle" in *Homo Ludens 2.0: Play, Media and Identity*, Edited by Valerie Frissen, Sybille Lammes, Jos de Mul and Joost Raessens, Amsterdam University Press, Netherlands (2013).
6. Liapis A., Gillian Smith and Noor Shaker "Mixed-initiative Content Creation" in Noor Shaker, Julian Togelius, and Mark J. Nelson (2016). *Procedural Content Generation in Games: A Textbook and an Overview of Current Research*. Springer. ISBN 978-3-319-42714-0
7. Cheong, Y.-G., R. Khaled, C. Holmgard and G. N. Yannakakis, "Serious Games for Teaching Conflict Resolution: Modeling Conflict Dynamics," in Poggi et al., (Eds.), *Conflict and negotiation: Social research and machine intelligence*, 2014.
8. Drachen, A., C. Thureau, J. Togelius, G. N. Yannakakis, C. Bauckhage, "Game Data Mining," in Seif El-Nasr et al., (Eds.), *Game Analytics --- Maximizing the Value of Player Data*, pp. 205-253, 2013. Springer London.
9. Giannakos, M., Voulgari, I., Papavlasopoulou, S., Papamitsiou, Z., & Yannakakis, G. (2020). *Games for Artificial Intelligence and Machine Learning Education: Review and Perspectives. Non-Formal and Informal Science Learning in the ICT Era*, 117-133.

10. Gualeni, S. 2019. "Virtual World-Weariness: On Delaying the Experiential Erosion of Digital Environments". In Gerber, A. and Goetz, U. (eds.) *The Architectonics of Game Spaces: The Spatial Logic of the Virtual and its Meaning for the Real*, 153-165. Bielefeld, Germany: Transcript.
11. Gualeni, S. (2018) 'A Philosophy of 'DOING' in the digital'. In Romele, A. and Terrone, E. (eds.), *Towards a Philosophy of Digital Media*, pp. 225-255. Basingstoke (UK): Palgrave Macmillan, Cham
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15. Khaled, R. Culture and Gamification. In *The Gameful World*, MIT Press, 2014.
16. Khaled, R. Questions over Answers: Reflective Game Design. In *Playful Subversion of Technoculture*, Springer, 2015.
17. Khaled, R., Vasalou, A., and Joiner, R. Understanding and Designing for Conflict Learning Through Games. Accepted and forthcoming chapter in *Emotion in Games: Theory and Praxis*, Springer 2015.
18. Karpouzis K. and G. N. Yannakakis, "Introduction to Emotion in Games," in Karpouzis and Yannakakis, (Eds.) *Emotion in Games: Theory and Praxis*, Springer, (to appear in fall 2015).
19. Nielsen, J. L., B. F. Jensen, T. Mahlmann, J. Togelius and G. N. Yannakakis, "AI for General Strategy Game Playing," in Angelides and Agius (Eds.), *Handbook of Digital Games*, pp. 274-304, 2014.
20. Liapis, A. "Artificial Intelligence for Designing Games," In *The Handbook of Artificial Intelligence and the Arts*, Penousal Machado, Juan Romero, and Gary Greenfield (Eds.). Springer. (in print) (Expected 2020 or 2021)
21. Ntelia, R.E. (2020). In the Mood for Love: Embodiment and Intentionality in NPCs. In L, Grace (Ed.). *Love and Electronic Affection: A Design Primer*. Florida: CRC Press.
22. Shaker, N., J. Togelius and G. N. Yannakakis, "The experience-driven perspective," in Togelius et al., (Eds.), *Procedural Content Generation in Games. A textbook and an overview of current research*, Springer 2015.
23. Shaker, N., G. Smith and G. N. Yannakakis, "Evaluating Content Generators," in Togelius et al., (Eds.), *Procedural Content Generation in Games. A textbook and an overview of current research*, Springer 2015.
24. J. Togelius and G. N. Yannakakis, "Emotion-driven Level Design," in Karpouzis and Yannakakis, (Eds.) *Emotion in Games: Theory and Praxis*, Springer, 2016.
25. Togelius, J., and G. N. Yannakakis, "Assessing Believability," in P. Hingston (Ed.) *Believable Bots*, 2013. Springer-Verlag.
26. Vella, D. (2019). "There's No Place Like Home: Dwelling and Being at Home in Digital Game Worlds." In Aarseth, E., & Günzel, S. (eds.), *Ludotopia: Spaces, Places and Territories in Computer Games*. Bielefeld, Germany: Transcript Publishing, 141-166.
27. Voulgari, I. (2020). *Digital Games for Science Learning and Scientific Literacy*. In *Non-Formal and Informal Science Learning in the ICT Era* (pp. 35-49). Springer, Singapore.
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29. Yannakakis, G. N., P. Spronck, D. Loiacono and E. Andre, "Player Modeling," in Togelius et al., (Eds.) *Dagstuhl Seminar on Artificial and Computational Intelligence in Games*, 2013. Springer-Verlag.
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2. Barr, P. Critical Jostling: Jostle Bastard and Jostle Parent as Critical Reflective Practice. *GAME: The Italian Journal of Game Studies*. No.5. (under review)
3. Burelli P., and G. N. Yannakakis, "Adapting Virtual Camera Behaviour through Player Modelling," *User Modeling and User-Adapted Interaction*, Springer-Verlag, 2015. ISI Impact Factor: 1.9.
4. Eladhari M. P., The Mind Module - Using an Affect and Personality Computational Model as a Game-play Element, *IEEE Transactions on Affective Computing*, 2014
5. Calleja, G. "Will Love Tear Us Apart: Adapting the Lyrical to the Ludic", *Countertext*, Vol 2 Issue 2, *Edinburgh University Press*. Scotland.
6. Calleja, G., "Games, Literature and the Imagination", *Electronic Book Review*, Open Humanities Press, USA. (Forthcoming).
7. Dahroug, A., Andreas Vlachidis, Antonios Liapis, Antonis Bikakis, Martin Lopez-Nores, Owen Sacco and Jose Juan Pazos-Arias: "Using Dates as Contextual Information for Personalized Cultural Heritage Experiences," in *SAGE Journal of Information Science*, 2019
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10. Gravina, D., Antonios Liapis and Georgios N. Yannakakis: "Quality Diversity Through Surprise," in *Transactions on Evolutionary Computation*, vol. 23, no 4, pp. 603-616, 2019.
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13. Gualeni, S. 2016. "The Experience Machine: Existential Reflections of Virtual Worlds". *Journal of Virtual World Research*, Vol. 9, n. 3. ISSN: 1941-8477
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15. Grappiolo, C. H. P. Martinez, and G. N. Yannakakis, "Validating Generic Metrics of Fairness in Game-based Resource Allocation Scenarios with Crowdsourced Annotations," *Transactions on Computational Collective Intelligence*, pp. 176-200, 2014. Springer Berlin Heidelberg.
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17. Holmgaard, C., A. Liapis, J. Togelius, G. N. Yannakakis, "Evolving Models of Player Decision Making: Personas versus Clones," *Entertainment Computing*, Elsevier, 2015.
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23. Liapis A., Georgios N. Yannakakis, Constantine Alexopoulos and Phil Lopes: "Can Computers Foster Human Users' Creativity? Theory and Praxis of Mixed-Initiative Co-Creativity," *Digital Culture & Education (DCE)*, 8 (2). 2016
24. Liapis, A., G. N. Yannakakis and J. Togelius, "Constrained Novelty Search: A Study on Game Content Generation," *Evolutionary Computation*, 2014. MIT Press. --- ISI Impact Factor: 3.733.
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29. Melhart, D., Georgios N. Yannakakis and Antonios Liapis: "I Feel I Feel You: A Theory of Mind Experiment in Games," in *Kunstliche Intelligenz*, vol. 34, pp. 45–55. Springer, 2020.
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## Conference/Workshop Papers (154)

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2. Barros, G., A. Liapis, J. Togelius: "Data Adventures," in Proceedings of the FDG workshop on Procedural Content Generation in Games, 2015.
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140. Voulodimos, A., Fokeas, K., Doulamis, N., Doulamis, A., & Makantasis, K. (2020). Noise-Tolerant Hyperspectral Image Classification Using Discrete Cosine Transform and Convolutional Neural Networks. *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences-ISPRS Archives*, 43(B2), 1281-1287.
141. Westerlaken, Michelle; Gualeni, Stefano. 2016. 'Becoming with: Towards the inclusion of animals as participants in design processes'. *Proceedings of ACI '16* November 16-17, 2016, Milton Keynes, United Kingdom, ACM Press.
142. Westerlaken, Michelle; Gualeni, Stefano. 2016. 'Situated Knowledges through Game Design: A Transformative Exercise with Ants. *Proceedings of the Philosophy of Computer Games Conference*. Valletta, Malta, November 1-4, 2016.
143. Westerlaken, M.; Gualeni, S. 2014. 'Grounded Zoomorphism: an evaluation methodology for ACI design'. Paper presented at the *ACE '14 Workshops* in Funchal, Portugal, November 11 – 14, 2014.
144. Westerlaken, M.; Gualeni, S. 2014. "Felino: The Philosophical Practice of Making an Interspecies Video Game" at the 2014 *Philosophy of Computer Games conference*, Bilgi University of Istanbul, Turkey, November 13-16, 2014
145. G. N. Yannakakis, R. Cowie, and C. Busso, "The Ordinal Nature of Emotions," in *Proceedings of the Seventh International Conference on Affective Computing and Intelligent Interaction (ACII)*, 2017. **(Best Paper Award)**
146. Yannakakis, G. N. and Khaled, R. Village Voices: A Personalised and Adaptive Game for Conflict Resolution. In *Proceedings of FDG 2013*, 2013.

147. G. N. Yannakakis and A. Liapis, "Searching for Surprise," in *Proceedings of the Seventh International Conference on Computational Creativity*, 2016.
148. Yannakakis, G. N., A. Liapis, C. Alexopoulos, "Mixed-Initiative Co-Creativity," in *Proceedings of the 9th International Conference on Foundations of Digital Games*, 2014.
149. Yannakakis, G. N. and J. Togelius, "Experience-driven Procedural Content generation (Extended Abstract)", in *Proceedings of the Sixth International Conference on Affective Computing and Intelligent Interaction (ACII 2013)*, 2015. **(Invited paper)**
150. Yannakakis, G. N., and H. P. Martinez, "Grounding Truth via Ordinal Annotation", in *Proceedings of the Sixth International Conference on Affective Computing and Intelligent Interaction (ACII 2013)*, 2015. **(Invited paper)**
151. Zhang, J., R. Taarnby, A. Liapis, S. Risi: "DrawCompileEvolve: Sparking Interactive Evolutionary Art with Human Creations," in *Evolutionary and Biologically Inspired Music, Sound, Art and Design (EvoMusArt)*, vol. 9027, LNCS. Springer, 2015.
152. Westerlaken, M.; Gualeni, S. (2017). "A dialogue concerning 'doing philosophy' with and within computer games". *Proceedings of the Philosophy of Computer Games Conference*. Krakow, Poland, 2017.
153. Westerlaken, M.; Gualeni, S. (2016). "Becoming with: Towards the inclusion of animals as participants in design processes". *Proceedings of ACI '16 November 16-17, 2016*, Milton Keynes, United Kingdom, ACM Press.
154. Westerlaken, M.; Gualeni, S. (2016). "Situated Knowledges through Game Design: A Transformative Exercise with Ants". *Proceedings of the Philosophy of Computer Games Conference*. Valletta, Malta, November 1-4, 2016.

## Games Published

Pippin Barr

- *BREAKSOUT*, 2015, online
- *Best Chess*, 2015, online
- *REAL BAKU 2015* with Agence Babel, Fédération Internationale des Droits de l'Homme (FIDH), 2015, online
- *The Stolen Art Gallery*, 2015, online
- *Let's Play: The Shining*, 2015, online
- *Jostle Parent*, 2015, online
- *Sound System II*, 2015, online
- *What We Did* with Rilla Khaled, 2015, online
- *Let's Play: Let's Play: Ancient Greek Punishment: Art Edition Edition*, 2015, online
- *Sound System I*, 2015, online
- *MANIFEST*, 2014, online
- *Abramovic Method Games* with Marina Abramovic, 2014, online
- *Get X Avoid Y*, 2014, online
- *The Junior Mint* with @seinfeld2000, 2014, online
- *Leaderboarder*, 2014, online
- *Don't Drown*, 2014, online
- *Durations*, 2014, online
- *Lo-Fi Dick Fight*, 2014, online
- *Drosophila* with Gordon Calleja, and Sidsel Hermansen, 2014, online
- *Jostle Bastard*, 2013, online
- *The Digital Marina Abramovic Institute (dMAI)* with the Marina Abramovic Institute, 2013, online
- *Snek*, 2013, online
- *The Mumble Indie Bungle*, 2013, online
- *Art Game*, 2013, online

#### Gordon Calleja and Constantino Oliva

- “Will Love Tear Us Apart” – [www.willlovetearusapart.com](http://www.willlovetearusapart.com) (2013). Mighty Box Games. Presented at Ars Electronica 2013 and nominated for awards at SXSW Interactive and at the Festival du Nouveau Cinéma of Montreal. Featured on Rolling Stone US, Repubblica, Fact Mag. Funded by the Malta Arts Fund.

#### Gordon Calleja

- “Posthuman: Saga” – (2018) <https://www.kickstarter.com/projects/mightyboards/posthuman-saga> - Including Writing and narrative design on *Posthuman Saga* (Mighty Boards 2018) by Dr. Daniel Vella.
- “Vengeance” – (2016) - <https://www.kickstarter.com/projects/mightyboards/vengeance-2>
- “Posthuman” – (2015) - <https://www.kickstarter.com/projects/532062403/posthuman>

#### Stefano Gualeni

- “Construction BOOM!” (2020) - Available at [boom.gua-le-ni.com](http://boom.gua-le-ni.com), tile-laying critical board game developed with Rebecca Portelli, and Jasper Schellekens.
- “HERE” (2018) - Available at [here.gua-le-ni.com](http://here.gua-le-ni.com), developed with Rebecca Portelli, Diego Zamprognò, and Riccardo Fassone. Challenges its players to engage with- (and be puzzled by-) the philosophical notion of indexicality. More specifically, it poses the question of what it means when the word 'here' is used in a computer game.
- “Something Something Soup Something” – <http://soup.gua-le-ni.com/> (2017). Funded by Maltco research grant the game is a philosophical thought experiment on the subjectivity of words. The game has been featured in numerous publications including Kotaku, PC Canard, New York Times Food and Wine, Atlas Obscura, among many others.

#### Antonios Liapis

“New Born World” – <http://thenewbornworld.antoniosliapis.com/index.html> (2018). Funded by Maltco research grant the game is a storytelling game, played in a social setting and facilitated by a single mobile device. “DATA Agent” - <https://champchampchamp.itch.io/data-agent> (2018). A game by Dr. Liapis that uses Wikipedia content to make murder mysteries.

#### David Melhart and Jasper Schellekens

“Xtreme Yoga: Ultimate” (2019)– game made using Tobii Eye-tracker for research purposes. Used for research by NTNU in upcoming publication. Potentially to be ported into a new project development in *Wild Eye*.

#### Constantino Oliva

- “Otogarden” (2020) - A musical game about free improvisation. <https://otogarden.com/>

## Appendix B: Invited Talks for 2013-2020

### Keynotes

1. Barr, P. Got Curious? Keynote at Interface 2013, Carleton University, Ottawa, Canada. April 2013. <http://interface2013.wordpress.com/>
2. Calleja G., "Games and the Reconceptualisation of Narrative", *Digital Interfaces in Situations of Mobility: Cognitive, Artistic, Game Devices*, Sorbonne, Paris, France. 2014.
3. Calleja, G., Invited Speaker: "The Making of Will Love Tear Us Apart", Ars Electronica Festival 2013, Linz, Austria.
4. Eladhari, M. P., AI and Game Prototyping, Guest talk at course Artificial Intelligence (EPGY2013), Stanford University, July 2013.
5. Gualeni, S. (2018) April the 20th: CREMO Project Workshop (Waterfront Hotel, Sliema, Malta). 'Philosophy with (and within) the Digital'
6. Gualeni S. Codemotion Milan 2015 conference: 'Transforming Oneself Through the Practice of Game Design' – Nov 2015.
7. Khaled, R. What We Talk About When We Talk About Procedural Content Generation. IEEE Conference on Computational Intelligence and Games, Dortmund, Germany, 2014.
8. Khaled, R. Games and Learning. Annual Conference of the Association of MultiMediaDesign Teachers in Denmark, Middelfart, Denmark, 2013.
9. Liapis A., Designing CAD tools for novices: can algorithms enhance productivity or foster creativity?" at the nucl.ai: Artificial Intelligence in Creative Industries conference (2015)
10. Vella, D. (2019). "The Promise of Being Otherwise: Keynote paper presented at the 13<sup>th</sup> International Conference in the Philosophy of Computer Games, St. Petersburg, Russia, October 21-24.
11. Vella, D. (2018). "The Wanderer in the Virtual Ruin: Digital Games and the Ruin-Situation." Keynote paper presented at the Death and Macabre Aesthetics in Games Conference, Moscow, Russia, April 12-13.
12. Yannakakis, G. N., Keynote: GaLA conference, Palermo, December 2018.
13. Yannakakis, G. N., Keynote: International Conference on Physiological Computing Systems, Seville, September 2018.
14. Yannakakis, G. N., Keynote: Artificial Intelligence and Intelligent Applications Conference, Rhodes, May 2018.
15. Yannakakis, G. N. Keynote: 3rd Workshop on Emotion and Sentiment in Social and Expressive Media: User Engagement and Interaction, ACII, October 2017
16. Yannakakis, G. N. Keynote: 6th EAI International Conference: ArtsIT, Interactivity & Game Creation, October, 2017
17. Yannakakis G. N., International Summer School on Deep Learning (DeepLearn 2017), Bilbao, July 2017.
18. Yannakakis, G. N. Keynote: Bootcamp on Heart Rate and Galvanic Skin Response as Measures for Assessing Human Experience, Aarhus University, May 2017.
19. Yannakakis, G. N. Keynote: Prometheus Game Jam Athens, June, 2017.
20. Yannakakis, G. N. Keynote: Global Game Jam Athens, January, 2017.
21. Yannakakis, G. N. Keynote: International GameOn Conference, Amsterdam, December 2015.
22. Yannakakis, G. N. Keynote: 15th Conference of Hellenic Psychological Society, Cyprus, May 2015.
23. Yannakakis, G. N. Keynote: 9th International Workshop on Semantic and Social Media Adaptation and Personalization, Corfu, November 2014
24. Yannakakis, G. N. Keynote: International Research-Centered Summer School in Cognitive Systems and Interactive Robotics, Data and Context Analysis, Athens, July 2014.
25. Yannakakis, G. N. Keynote: Conferencia de Ciencias e Artes dos Videojogos, Portugal, November, 2014. (Invitation declined)

26. Yannakakis, G. N. Keynote: Encontro Nacional de Estudantes de Informatica (ENEI) Conference, Aveiro, Portugal, April, 2014.
27. Yannakakis, G. N. Keynote: First Annual Contact Forum of the PROSECCO network, Madrid (El Escorial), February, 2014
28. Yannakakis, G. N. Keynote: The Tenth International Workshop on Agents and Data Mining Interaction, AAMAS 2014 (Invitation Declined)
29. Yannakakis, G. N. Keynote: International Conference on Affective Computing and Intelligent Interaction (ACII 2013), Geneva, September, 2013.

## Other Invited Talks

1. Barr P. *Less gameplay*, screenshake2015. Antwerp, Belgium. 2015.
2. Barr P. *Minimal Game Design*. Global Game Jam Malta. University of Malta, Msida, Malta. 2015.
3. Barr P. *On Making Digital "Art" "Games"*. Cologne Game Lab. Cologne University of Applied Sciences. Cologne, Germany. 2014.
4. Barr P. *The Code is Present*. A MAZE / Johannesburg. Johannesburg, South Africa. 2014.
5. Barr P. *Game. / Time*. Critical Hit. Concordia University, Montréal, Canada. 2014.
6. Barr P. *Game Time*. Pecha Kucha Mdina. Mdina, Malta. 2014.
7. Barr P. *The Game Designer is Present*. A MAZE / Berlin. Berlin, Germany. 2014.
8. Barr, P. Got Curious? Talk at SKINS 4.0 Workshop on Aboriginal Storytelling in Digital Media, Concordia University, Montréal, Canada. May 2013. <http://skins.abtec.org/>
9. Barr, P. Curious Games. Talk at A MAZE Indie Pop Up at Republika Festival, Rijeka, Croatia. July 2013. <http://www.amaze-festival.de/%5Btermalias-raw%5D/blog/a-maze-indie-pop-republika-fest-rijeka-croatia>
10. Barr, P. What is curious games?. Talk at Playful 2013, London, England. October 2013. <http://thisisplayful.com/>
11. Barr, P. Curious games, a fireside chat. Talk at MozFest 2013, London, England. October 2013. <http://mozillafestival.org/>
12. Bonello Rutter Giappone, K., and Vella, D. (2018). "Square, Marketplace, Tavern: Singleplayer Fantasy Roleplaying Game Cities as Contested Spaces." Paper presented at the Games and Literary Theory Conference 2018, Copenhagen, Denmark, August 15-16.
13. Bonello Rutter Giappone, K., Callus, I., Ntelia, R., and Vella, D. (2018). "Games and the Post-Literary." Panel presentation at the 2<sup>nd</sup> Countertext Conference, Valletta, Malta, 6-8 April.
14. Calleja, G., "Understanding Player Experience", BUG Lab, Bahçeşehir University, Istanbul, Turkey, 2014.
15. Calleja, G. "Attention, Involvement, Immersion", DIGRA Flanders seminar, Antwerp, Belgium, 2013.
16. Calleja, G. "The End: Aesthetic and Ludic Topoi in Digital Entertainment", The End: Terminus in Literature, Media and Culture, Aalborg University, Denmark.
17. Eladhari, M. P., Co-creation, Invited talk at Instituto Superior Tecnico, Lisbon, Portugal, September 2013.
18. Gualeni, S., (2019) September the 26th: Progetto PAC-PAC in Pula (Sardinia) 'Game Design in Pillole' (invited talk with Riccardo Fassone)
19. Gualeni, S., (2019) August the 9th: DiGRA 2019 conference in Kyoto (Japan) 'How to Reference a Digital Game'
20. Gualeni, S., (2019) January the 31st: University of Gothenburg (Sweden) 'Experience Machines'
21. Gualeni, S., (2019) February the 6th: University of Skövde (Sweden), MTEC research group meetup. 'Experience Machines'
22. Gualeni, S., (2019) April the 12th: Games Beyond Games event in Turin (Italy), sede del Polo del '900, 'Fare cultura in/con mondi digitali'

23. Gualeni, S., (2019) August the 8th: DiGRA 2019 conference in Kyoto (Japan) 'On the de-familiarizing and re-ontologizing effects of glitches and glitch-alikes'
24. Gualeni, S., Jørgensen, I., Möring, S., and Vella, D. (2018). "Existential-Phenomenological Approaches to Game Worlds." Panel presentation at the DiGRA 2018 Conference: The Game is the Message, Turin, Italy, July 25-28.
25. Gualeni, S. (2018) October the 21st: Athens Games Festival (Athens, Greece). 'BIG TROUBLE in Little Cities'
26. Gualeni, S. (2018) October the 5th: University of Lille (Lille, France). 'Philosophy with (and within) the Digital'
27. Gualeni, S. (2018) September the 27th: Centre for Digital Humanities (University of Gothenburg, Sweden). 'BIG TROUBLE in Little Cities'
28. Gualeni, S. (2018) September the 21st: Centre for Digital Humanities (University of Gothenburg, Sweden). 'Philosophy with (and within) the Digital'
29. Gualeni, S. (2018) July the 26th: DiGRA 2018 conference in Turin, Italy 'Projectuality in Digital Gameworlds'
30. Gualeni, S. (2018) June the 9th: The Architectonics of Virtual Space (Bibliothek Werner Oechslin, Einsiedeln, Switzerland). 'BIG TROUBLE in Little Cities'
31. Gualeni, S. (2018) May the 14th: Department of Classics & Archaeology (University of Malta). 'BIG TROUBLE in Little Cities'
32. Gualeni, S. (2017) November the 29th: Philosophy of Computer Games conference (Krakow, Poland). 'A dialogue concerning 'doing philosophy' with and within computer games' Gualeni, S. Philosophy of Computer Games Conference. 'Video games and (as) scientific research' (panel). November 2016.
33. Gualeni, S. 'Virtual Weltschmerz' (invited talk) Coimbra International Conference on the Virtual, University of Coimbra (Portugal). October 2016.
34. Gualeni, S.: 'DOING Philosophy with (and in) Virtual Worlds' (invited talk)
35. University of Porto (Portugal). October 2016.
36. Gualeni, S. 'Giocare sul serio' (panel) FESTIVALETTERATURA, Mantova (Italy). September 2016.
37. Gualeni, S. 'Una Macchina per Esperienze Straordinarie' (invited talk) FESTIVALETTERATURA, Mantova (Italy). September 2016.
38. Gualeni, S., 'Game Design as a Self-Transformative Process' (invited talk) Laguna Beach (CA, U.S.A.). July 2016.
39. Gualeni, S. 'Trasformazione' (interview) Gett1 Podcast series, Ep. 05. June 2016.
40. Gualeni, S. 'University Matters' (radio interview) Campus FM. April 2016.
41. Gualeni S. Guest-lecture at the BTK University of Art and Design of Berlin, Germany 'In-game metaphors: an autumnal reflection'. Oct-2015.
42. Gualeni S. University of Turin, Italy 'ONTO-LOGICAL MACHINES'. Jun-2015
43. Gualeni, S., 2017, November the 29th: Philosophy of Computer Games conference (Krakow, Poland). 'A dialogue concerning 'doing philosophy' with and within computer games' (paper presentation)
44. Gualeni, S., 2017, November the 23rd: University of Gothenburg (Sweden) 'Experience Machines' (invited lecture)
45. Gualeni, S., 2017, November the 23rd: University of Gothenburg (Sweden) 'Toying around with thought experiments' (invited lecture) Gualeni, S., 2017, October the 20th: Radio 2 Malta (PBS). 'Radio Mocha' (radio interview)
46. Gualeni, S., 2017, September the 29th: Science and the City (Malta). 'Chicken and egg: philosophical play with thought experiments' (public talk)
47. Gualeni, S., 2017, September the 18th: Game Studies Seminar 2017 (University of Malta). 'Toying around with thought experiments' (lecture)
48. Gualeni, S., 2017, May the 3rd: IT-University Copenhagen (Denmark). 'Toying around with thought experiments' (guest lecture)
49. Gualeni, S., 2017, March the 1st: Cafe' Scientifique (Malta). 'Chicken and egg: philosophical play with thought experiments' (public talk)

50. Gualeni, S., 2017, February the 15th: University of Skövde (Sweden), MTEC research group. 'DOING philosophy with (and within) Virtual Worlds' (invited talk)
51. Gualeni, S., 2017, February the 17th: IT-University Copenhagen (Denmark). 'DOING philosophy with (and within) Virtual Worlds' (invited talk)
52. Gualeni, S., 2017, January the 30th: Radio 2 Malta (PBS). 'Radio Mocha' (radio interview)
53. Gualeni, S., 2016, November the 30th: University of Malta (Malta), Faculty of Media and Knowledge Sciences. 'How Ideas Go to Market' (invited presentation and seminar)
54. Gualeni, S., 2016, November the 16th: University of Malta (Malta), Game Lecture Series. 'Experience Machines' (invited talk)
55. Gualeni, S., 2020, November the 24th: Università Cattolica di Milano, Facoltà di Psicologia (virtual): 'La Stanchezza del Mondo nel Virtuale' (guest lecture).
56. Gualeni, S., 2020, November the 26th: De Koninklijke Academie van Beeldende Kunsten of Den Haag (virtual): 'Virtual World-Weariness' (guest lecture)
57. Khaled, R. Reality Bites, or 10 Things Serious Game Researchers Will Never Admit to Doing but Do Anyway. GDC Education Summit, 2015.
58. Khaled, R. Reflektors. Screenshake Game Festival, Antwerp, Belgium, 2015.
59. Khaled, R. Questions over Answers: Reflective Game Design. Critical Hit, Montreal, 2014.
60. Khaled, R. Questions over Answers: Reflective Game Design. A MAZE Berlin, Germany, 2014.
61. Khaled, R. Reflective Game Design. Pecha Kucha Night, Valletta, Malta, 2014.
62. Khaled, R. Gamification Panel. Creativity Meeting Point 2013, Bilbao, Spain, 2013.
63. Khaled, R. Digital Games in Malta Panel. 5th Workshop in Information and Communication Technology. SmartCity, Malta, 2013.
64. Liapis, A. "Mixed-initiative Design, Designer Modeling and Game Development" at the Sapienza University of Rome (2015)
65. Liapis, A. "AI-assisted Game Design" at the Dagstuhl Seminar 15051: Artificial and Computational Intelligence in Games: Integration (2015)
66. Liapis, A. "Interactive Creativity of Man and Machine" (translated title) at the School of Fine Arts, University of Athens (2015)
67. Liapis, A. "Absurdist Procedural Content Generation" at the Future of PCG symposium, IT University, Copenhagen (2014)
68. Liapis, A., "Computational Game Creativity" at the Computer Science Annual Workshop Malta (2014)
69. Oliva C., Invited to hold a Workshop on Audio for Games and Interactivity. "Soundscape Analysis of Digital Games". Gamification Lab, Leuphana University, Lüneburg, 2015
70. Oliva, C., "The Musicking of Electroplankton", in *Replaying Japan*, August 2019.
71. Oliva, C., "Ergodic Musicking", in *Ludomusicology*, April 2019.
72. Schellekens, J. (2019). "Xtreme Yoga: Eye Fight Bad Vibes." MITA Emerging Technologies Lab. Malta Information Technology Agency, Blata I-Bajda, Malta. 25 November.
73. Schellekens, J. (2019). "Make Hay While the Sun Shines: Designing a Critical Board Game." Malta International Games Festival. 23 November.
74. Schellekens, J. (2019). "Artificial Intelligence Research at the Institute of Digital Games". THINK Soapbox. 9 July.
75. Spiteri Monsigneur, L., Oliva, C., "The Acousmatic Situation in Digital Games", in *Mapping Spaces, Sounding Places: Geographies of Sound in Audiovisual Media*, March 2019.
76. Vella, D. (2018). "Monstrous Ruins in the Team Ico Games." Paper presented at the Central and Eastern European Game Studies Conference, Prague, Czechia, October 11-13.
77. Vella, D., and Gualeni, S. (2018). "Projectuality in Digital Gameworlds." Paper presented at the DiGRA 2018 Conference: The Game is the Message, Turin, Italy, July 25-28.
78. Vella, D. (2018). "The Monstrous and the Monster in the Games of Team Ico." Paper presented at the Society of Cinema and Media Studies Conference 2018, Toronto, Canada, 14-18 March.
79. Yannakakis G. N., Athens Game Festival, Athens, October 2018.
80. Yannakakis G. N., Serious Games Conference, Hannover, CEBIT, June 2018.

81. Yannakakis G. N., Computer Games: Challenges and Opportunities conference (CGCO), Isfahan, February 2018
82. Yannakakis G. N., Dagstuhl seminar on Artificial and Computational Intelligence in Games. Invited Speaker, November 2017
83. Yannakakis G. N., Foundation for Research and Technology Hellas, Greece, March 2017
84. Yannakakis G. N., Technical University of Crete, Greece, March 2017
85. Yannakakis G. N., Affective Computing Group, Media Lab, MIT, Boston, May 2016
86. Yannakakis G. N., Northeastern University, Boston, May 2016
87. Yannakakis G. N., Banff workshop on Computational Modelling in Games, Banff, Canada. Invited Speaker, May 2016.
88. Yannakakis G. N., Imperial College London, December 2015.
89. Yannakakis G. N., University of Concepcion, Concepcion, Chile, November 2015.
90. Yannakakis G. N., Cyprus University of Technology, Limassol, Cyprus, 2015.
91. Yannakakis G. N., Goldsmiths, University of London, UK, 2014.
92. Yannakakis G. N., University College London, UK, 2014
93. Yannakakis G. N., Dagstuhl seminar on Artificial and Computational Intelligence in Games. Invited Speaker, 2015.
94. Yannakakis G. N., Sapienza University, Rome, Italy, 2014
95. Yannakakis G. N., Summer School: Creativity and Games in Education, Crete, 2013.
96. Yannakakis G. N., University of Technology, Sydney, School of Software, 2013.



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[digitalgames@um.edu.mt](mailto:digitalgames@um.edu.mt)