

# Annual Report

Academic Year 2021/22



## Contents

Excellence in Highlights.....	3
Creating Significant Value for UM and Malta.....	3
MSc in Digital Games.....	5
Students.....	5
PhD Students.....	6
International AI Doctoral Academy (AIDA).....	7
The EPSRC Centre for Doctoral Training in Intelligent Games and Game Intelligence (IGGI).....	7
Local Industry Scholarships and Collaboration.....	7
Institute’s Growth.....	8
Publications.....	8
Keynotes.....	10
Awards and Honours.....	10
Notable award nominations.....	11
Funded Projects.....	11
Ongoing.....	12
Research Excellence Recognition.....	13
Artificial Intelligence Research Group.....	14
Digital Humanities Research Group.....	15
Research Visitors.....	16
Events.....	17
Science and the City.....	17
Global Game Jam.....	18
Global Game Jam NEXT.....	19
Games for Change.....	19
Gamescom.....	19
Public lectures.....	20
Academic Seminars.....	21
Industry Talks.....	23
IDG in the Media 2021/22.....	23
Alumni – What happens after the MSc.....	24
Looking to the Future.....	24
Appendix A: Publications until 2022.....	26

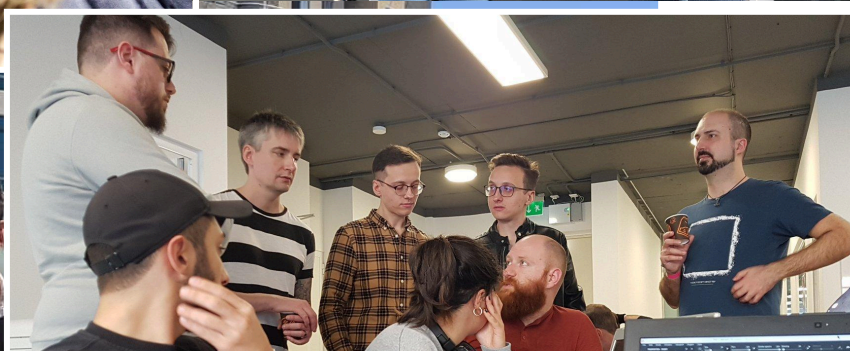
Books (4).....	26
Edited Volumes/Special Issues (6).....	26
Book Chapters (37).....	26
Journal Papers (73).....	28
Conference/Workshop Papers (190).....	32
Games Published.....	42
Appendix B: Invited Talks for 2013-2022.....	44
Keynotes (66).....	44
Other Invited Talks (104).....	46

## Excellence in Highlights

- MSc in Digital Games: **Top 25 Game Design Schools** – *Princeton Review*: **22<sup>nd</sup> place** in 2022
- Ranked in **Top 10 in Technical Games Research** globally – 6<sup>th</sup> place in 2022
- Published more than **300 papers** since 2013
- Researchers have received more than **22,000 citations (h-index: 170)** collectively
- Attracted over **6 million Euro** of research funding to UM since 2013.
- Participated in projects worth of **30 million Euro** in total
- Submitted **51 H2020** project proposals with a **success rate of 19.6%** (11.95% EU average). Also submitted 12 National and ERASMUS proposals (100% success rate)
- Members delivered over **170 Keynotes** and Invited Talks and over 10 national and international media appearances in 2021/22
- Received **over 20 awards** for papers in top-tier conferences/journals and games
- IDG grew from 4 members to **27 members** within 8 years of operations.
- Synergies with **14 different UM departments**, faculties, and institutes.
- Released **14 games** which received broad exposure outside of project deliverables
- 3 Alumni have **released games** that have been nominated or won **awards**
- Increased industry collaboration (**Unity Centre of Excellence**) and cross-departmental synergies at University of Malta
- **Modl.ai**, a spin-out of IDG in 2018, is now listed within the **top 100 most innovative AI companies worldwide**

## Creating Significant Value for UM and Malta

Beyond the outstanding achievements listed above, the impact and significance of IDG for UM and the country is reflected through key research and development indicators identified by the European Commission through its **European Innovation Scoreboard 2021<sup>1</sup> (EIS)**. The following table showcases the Impact IDG has across three indicators of the *EIS 2021* (top 3 rows) and three indicators set by EU and MCST as relevant for R&I growth and sustainability. All six indicators are related to improving the *research intensity* of Malta.





## 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, 2019, 2020, 2021 and 2022**. We have achieved our goal to remain in the list ranking **22<sup>nd</sup>** in **2022**.

### Students

Student numbers and interest in the MSc has grown substantially since it was first offered in 2012. In 2012 (under MaKS) the programme started with 5 students, but we have since then managed to receive a minimum of around 15 applications a year; see **Figure 1** for the detailed numbers. The Institute's was able to target potential students more effectively and this has resulted in more applications as well as an inevitable increase in the quality of the applications. 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. Our competitors (e.g. IT Copenhagen) provide feedback on acceptance early in the year and also have merit-based scholarships available.

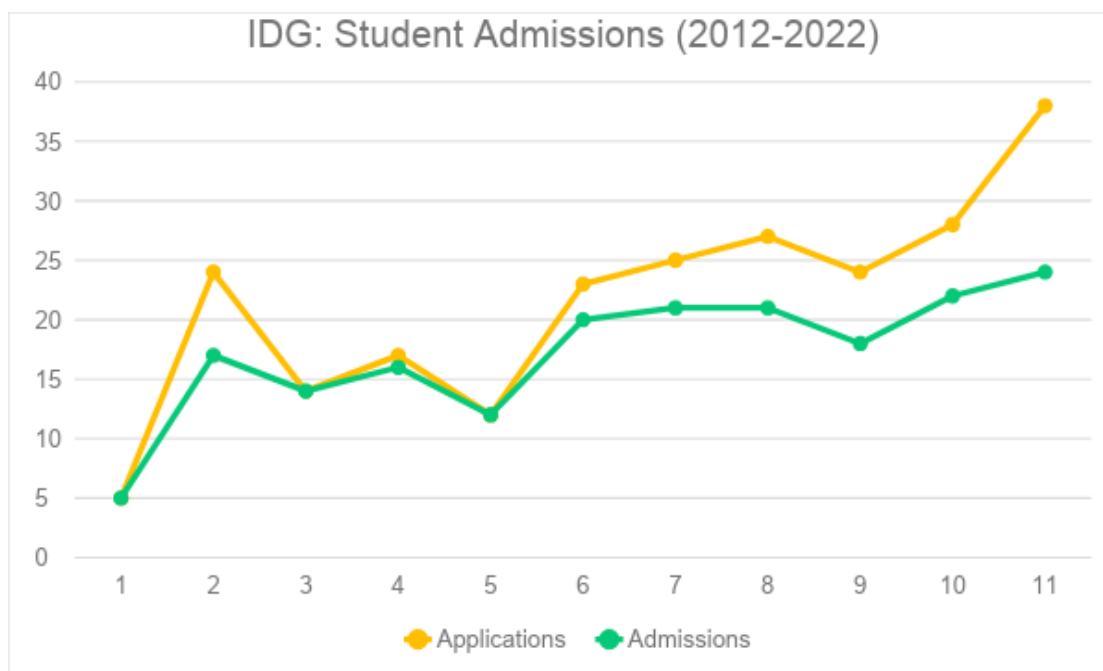


FIGURE 1 - IDG STUDENT ADMISSIONS

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** a trend that has continued in 2021. Despite Covid-19 hesitation we still received 28 applications in 2021 which is still near our usual numbers over the past few years.

Compared to other Institutes at the University, the Institute of Digital Games still manages to attract a significant amount of students (see Figure 2).

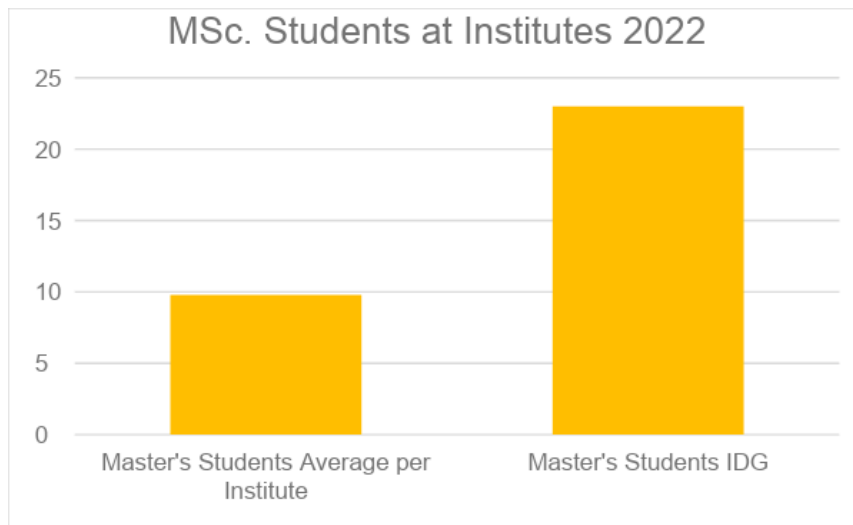


FIGURE 2 - MSc STUDENTS AT INSTITUTES <sup>3</sup>

## PhD Students

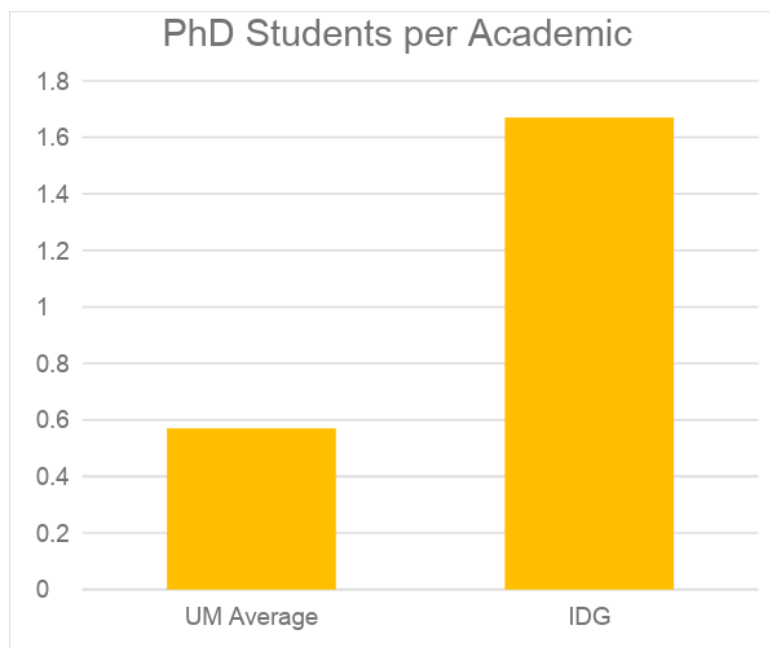


FIGURE 3 - PhD STUDENTS AT INSTITUTES <sup>4</sup>

As a centre of research excellence, we receive a considerable number of requests for students to do their PhDs with us from Malta and elsewhere. We have established our PhD board and **we currently have 9 PhD students (Manolis Xylakis, Marvin Zammit, Chintan Trivedi, Renata Ntelia, Theodoros Galanos, Kostmas Pinitas, Konstantinos Sfikas, Harry Apartolgo, Stefano Caselli)**. We also have **one PhD student (Jessica Rose Marcotte)**

<sup>3</sup> Source Registrar's Office

<sup>4</sup> Source Registrar's Office

**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.

Furthermore, the EC identifies a number of Key Performance indicators to measure the state of research and innovation in Malta and with 2 STEM PhD graduates in 2020/21 IDG has contributed to 6,8% of the STEM PhD graduates in Malta. PhD students in STEM are essential for furthering research and innovation in any situation. Another indicator that the EC deems important is the amount of foreign PhD students in an institution as this shows international collaboration and an investment in research and innovation that attracts talent from abroad. **89% of the Institute's PhD students are foreign** and therefore have been brought from outside of Malta to bolster the R&I capacities of the country. The Institute also continues to attract a significant number of PhD students, with an **average of 1.67 PhD student(s) per academic**, as compared to the university average of 0.57 per resident academic (Figure 3).

### International AI Doctoral Academy (AIDA)

The Institute and the University as a whole is a **founding member** and part of the **International AI Doctoral Academy (AIDA)** that is currently supported by 5 large-scale H2020 projects (including AI4Media)<sup>5</sup> and 58 Universities, Research Institutions and Industrial partners across Europe. AIDA has launched its doctoral programme in 2021.

### 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 4 years IDG will host a number of PhD students for different periods, co-supervising their activities.

### 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. We're in constant discussions with industry and constantly exploring ways to collaborate on research, training, and funding. 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 of Digital Games was the catalyst for a 400k EUR investment into the setting up of a Unity Centre of Excellence in Malta, a collaboration that spanned the Institute of Digital Games, the Faculty of ICT and the Faculty of Media and Knowledge Sciences.

<sup>5</sup> <http://155.207.4.33/wordpress/> (early draft webpage of AIDA)

## 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 **27 members**: 7 resident academics, 2 visiting scholars, 3 postdoctoral fellows, 9 PhD students, 5 research support officers and 1 administrative officer.

## 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 **264 peer-reviewed publications**.

In particular, we have published

- 4 Books
- 6 Edited books
- 37 Book chapters
- 91 Journal articles
- 202 Conference and workshop papers

Please see the Appendix A: Publications for 2013-2022 for a full list of the Institute's research output.

In the academic year 2021/22 the Institute researchers have published 1 Book, 5 Book Chapters, 21 Journal Papers, and 15 Conference Papers. The Institute has a healthy publication output. We estimate that the University of Malta has published 5000 papers (between 2013 and 2022) and the IDG has 300 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>6</sup> and the IDG produced about 6% 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 impact of IDG's work is reflected by **over 23,000 citations** (Google Scholar, Oct 2022) 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** (61) at the University of Malta (Google Scholar, Oct 2022). 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.

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<sup>6</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).



## Keynotes

Over the last 9 years IDG members have been invited to give **over 37 keynote talks** in top-tier international conferences and **over 135 invited talks** in various meetings, events, and academic institutions across the globe. Please refer to Appendix B: Invited Talks for 2013-2022 for a detailed list of Keynotes and other Invited Talks.

## Awards and Honours

IDG researchers have won the following awards.

- Prof. Georgios N. Yannakakis: **Most Active H2020 Researcher Award**, Malta Council of Science and Technology, 2021.
- Excavation Earth co-designed by Dávid Turczi, Wai Yee, and IDG's Gordon Calleja won both the **People's Choice** and the **Judge's Choice** award for **Best New Board Game** (Euro Style) at the 2021 UKGE Awards.
- Prof. Georgios Yannakakis highlighted as "**Best Scientist in University**" and "**Best Scientist**" in country in the area of Engineering and Technology according to the ADScientific Index in 2021.
- **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.
- Prof. Gordon Calleja's game: "**Excavation Earth**" won both the People's Choice and Jury Awards for the Best European Game at the UK Games Expo, 2021.
- Prof. Gordon Calleja's game: "**Vengeance Roll and Fight**" was awarded the Dice Tower Seal of Excellence, 2022.
- Dr. Antonios Liapis and Marvin Zammit won "**Best Student Paper Award**" at the International Conference on Computational Creativity for the paper "Seeding Diversity into AI Art", 2022.
- Dr. Antonios Liapis won the "**Most Helpful Reviewer Award**" for the IEEE Transactions on games, 2022.
- **IEEE Transactions on Affective Computing – Best of IEEE Transactions on Affective Computing 2021.** G. N. Yannakakis, R. Cowie, and C. Busso, "The Ordinal Nature of Emotions: An Emerging Approach," *IEEE Transactions on Affective Computing*, 2021. (Selected from **82 papers published in 2021**)
- **IEEE Best Paper Program Nomination** G. N. Yannakakis, R. Cowie, and C. Busso, "The Ordinal Nature of Emotions: An Emerging Approach," *IEEE Transactions on Affective Computing*, 2021. (Selected from **82 papers published in 2021**)

## Notable award nominations

Construction BOOM! By Stefano Gualeni and Jasper Schellekens was shortlisted for the **ION Awards**, one of the largest North American boardgame awards, as best strategy game for 2021.

Dr. Antonios Liapis at an impressive 3rd place in the area of Technology and Engineering (19th in the University and Country) in the ADScientific Index in 2021.

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 **four more times** for a best (IEEE CIG 2013, IEEE CIG 2020, IEEE COG 2021), an outstanding (ACM ICMI 2014) paper award.

## Funded Projects

IDG researchers have managed collectively **to attract more than 6 million Euro** to fund their research activities at UM by coordinating or participating in research projects of over **30 million Euro** in total.

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. We have also started collaborating on projects with the Media and Knowledge Sciences Faculty, specifically participating in their ErasmusXR training school and are further exploring ways to work together with the Immersive Technologies Lab.

## Ongoing

- G. Yannakakis and Antonios Liapis manage LAW-GAME. Total Budget: €7m; **Budget for UM: €505,000**
- G. Yannakakis manages SG4NS Developing Emotional Competences for Nursing Students. **Budget for UM: €30,000**
- G. Yannakakis and Antonios Liapis manage UPSKILLS: UPgrading the SKills of Linguistics and Language Students. Total budget: Budget for UM: **€125,000**
- G. Yannakakis manages the Maltco Lotteries Sponsorship. **Budget for UM: € 30,000**
- Antonios Liapis manages the Green Home project undertaken for the Malta Water and Energy Agency. **Budget for UM: €10,000**
- 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.**

- G. Calleja manages the Digital Vengeance. Digital Research and Development Fund, Malta Arts Council, Total budget € 20,000. **Budget for UM: € 20,000.**
- Dr. Antonios Liapis coordinates the RECLAIM: AI-powered Robotic Material Recovery in a Box (ID: 101070524). Funded under: Horizon-CL4; DIGITAL-EMERGING-01-09: AI, data and Robotics for the Green Deal (Innovation Action). Overall budget: € 2,934,800. Duration: not confirmed yet, as the project was awarded 18 March 2022. **Budget for UM: € 340,000.**
- Dr. Kostantinos Makantasis coordinates ERC Support Scheme - MCST - total budget €5,895 - September 2021. **Budget for UM: €5,895.**

nks at **22<sup>nd</sup> in the world** by the Princeton Review, however, in terms of game research the institute is in the top 10 (**9<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 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 became 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

## H2020 SUCCESS RATE

# 19.6%

45 SUBMITTED PROPOSALS  
10 SUCCESSFULLY FUNDED

**EU AVERAGE 11.95%**

productivity of other researchers. Prof. Yannakakis was ranked **in the top 2% of the extremely competitive field of Computer Science and top 0.5% of AI researchers globally.**

## 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 3 - PROF. YANNAKAKIS ON AI-PANEL AT CEBIT CONFERENCE ON SERIOUS GAMES ALONGSIDE DR. CHRISTIAN THURAU (TWENTY BILLION NEURONS) AND ANETTE KOTHE (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 15 researchers: the team is co-directed by Prof. Georgios N. Yannakakis and Dr Antonios Liapis and involves lecturer Dr Ahmed Khalifa, postdoctoral fellows (Dr Kostantinos Makantasis, Dr Iro Voulgari, Dr Daniele Gravina, David Melhart), PhD Students (Theodoros Galanos, Manolis Xylakis, Marvin Zammit, Chintan Trivedi, Kosmas Pinitas) and Research Associates (Matthew Barthet Kostantinos Sfikas, Lara Caruana Montaldo).

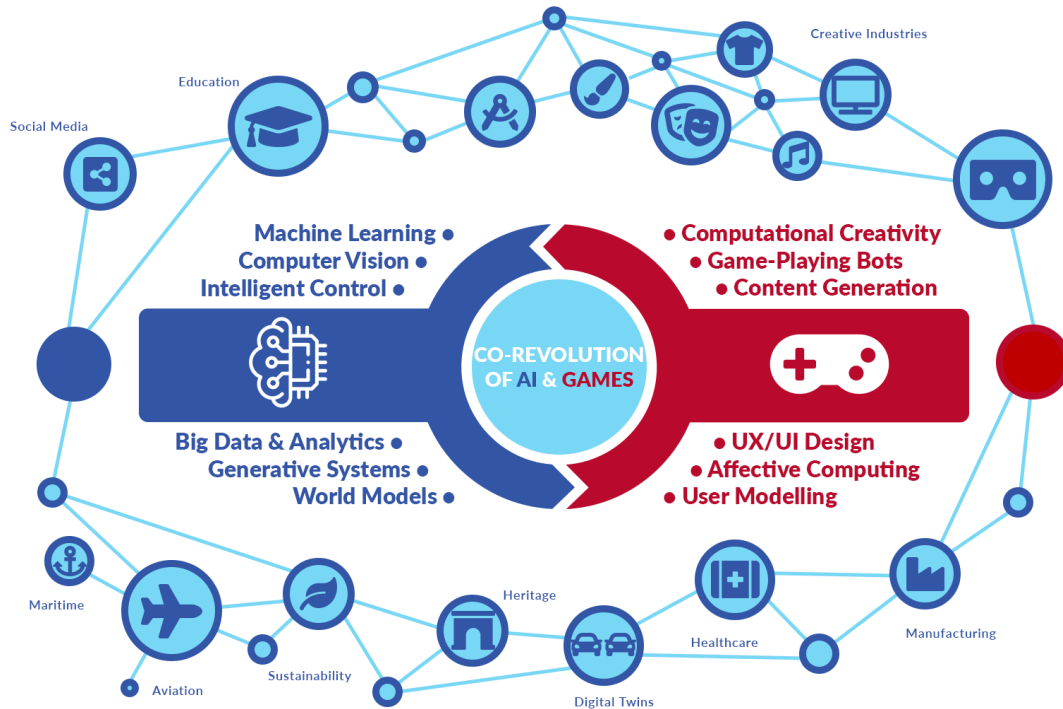


FIGURE 4 - AN OVERVIEW OF THE CO-REVOLUTION OF GAMES AND AI AND THE BROAD CROSS-SECTORAL APPLICATION POSSIBLE

## 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 crossroad 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 8 researchers, including Prof. Stefano Gualeni, Prof. Gordon Calleja, Dr. Daniel Vella, Dr. Costantino Oliva, Renata Ntelia, Melinda Sue Borg, Stefano Caselli, and Dr Krista Bonello Rutter Giapponne.

## Research Visitors

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:**
  - o Prof. Thomas P. Runarsson, University of Iceland, Iceland (2014);
  - o Dr Carlos Martinho, INESC-ID, Portugal (2014),
  - o Prof. Jean Claude Martin, Paris South University (2013).
- **4 Academic Erasmus Visit:**
  - o Prof. Mark Grimshaw from Aalborg University.
  - o Prof. Alan Meades from Canterbury Christ Church University
  - o Dr. Jaroslav Svelch from University of Bergen
  - o Dr Ricardo Chalmeta from Universidad Jaume I de Castellón
- **8 Extended Research Visits:**
  - o Claire Dormann from Ottawa University (2014)
  - o Nicholas Ward from University of Limerick (2014)
  - o Michelle Westerlaken Malmö University (2017)
  - o Ricardo Chalmeta from Universidad Jaume I (2018)
  - o Mike Cook (2018; University of Falmouth's Games Academy)
  - o Nele van de Mosselaer (2018; University of Antwerp)
  - o Ivan Rokošný (2018; Trnava University)
  - o Jan Proner (2018; Trnava University)
- **9 Visiting PhD students:**
  - o Mario Madureira Fontes (2015; Pontifical Catholic University, Brazil),
  - o Christoffer Pedersen Holmgaard (2014; IT University of Copenhagen),
  - o Antonis Liapis (2013-2014; IT University of Copenhagen),
  - o Eva A. Alblas (2015; Behavioral Science Institute of the Radboud University of Nijmegen)
  - o Nele van de Mosselaer (2020; University of Antwerp)
  - o Cristiana Pacheco (2020; Queen Mary University, UK)
  - o Sara Cuccu (2021; - Università degli Studi di Cagliari)
  - o Diogo Rato (2022; Instituto Superior Técnico, Universidade de Lisboa)
  - o Pedro Miguel Rocha Fernandes (2022; Instituto Superior Técnico, Universidade de Lisboa)
- **1 Fullbright Scholar** – in 2021 we're expecting to host a Fulbright Scholar, Theresa Devine (Arizona State University)
- **Foreign Industry Visitors:** Gabriel Robert, Lead Programmer Ubisoft (France), Jon Gibson, Studio Head, Electric Square (UK), Nathan Gouveia, Studio Production Director, Electric Square (UK), Patryk Grzeszcuk, 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), Christoffer Holmgaard, Modl.ai (Denmark).

## 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 9 times** (2014-2022) 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 5 - PROMOTIONAL POSTER FOR GAME JAM 2018

## Science and the City

The Institute has participated in **all seven 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, 2017, 2018, 2019 and 2022**, in which the 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 6 - DR. DANIELE GRAVINA SHOWCASES IDG GAMES

### Global Game Jam

The Institute has been running the Global Game Jam since its formation, starting in January 2014. It has become one of the key events in the videogame community in Malta attracting over 50 participants who are interested in tackling the challenge of developing a game in 48 hours. It provides a valuable link with industry and allows the students to make those connection with industry which are important to our students. Including networking with high-level industry players such as Art Director Mike Hudgins from Elder Scrolls Online and the games journalist Jupiter Hadley, amongst many distinguished guests that join us each year.

## Global Game Jam NEXT

Since 2019, the Institute has organised the Global Game Jam Next, a game jam 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.

## 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.



FIGURE 7 - PROF. STEFANO GUALENI SPEAKS ABOUT GAMES FOR CHANGE

## Gamescom

Renato Carvalho, our research support officer for the Institute of Digital Games went to Cologne, Germany, last week to represent the University of Malta and share all the work and research that is going on at the Institute at GamesCom 2022. Gamescom is one of the biggest conventions of video game in the world, this year it hosted 250,000 visitors from all over the world, 1,100 exhibitors from 53 different countries and had over 130,000,000 online views on its live show program. The Institute of Digital Games booth was at the GamingMalta foundation stand, where multiple partners from the academic world and the industry were able to exhibit their work towards the future of the video gaming world in Malta.



FIGURE 8 – RENATO CARVALHO (RSO) AT THE GAMESCOM CONFERENCE IN GERMANY (2022)

## 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.



FIGURE 9 - ACADEMIC SEMINARS AT IDG LAB

### 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 10 - 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 11 - 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.

## IDG in the Media 2021/22

- Dice Tower Game review by Mike Dilsio:  
<https://www.youtube.com/watch?v=53OUcnvg76g&t=2s>
- Player Elimination review:  
<https://playerelimination.com/2022/08/17/an-oldboy-learns-new-tricks-a-vengeance-roll-fight-review/>
- Dice Tower review with Brian:  
<https://www.youtube.com/watch?v=9slbcTTIwE>
- Lovin Malta:  
<https://lovinmalta.com/lifestyle/geek/excavation-earth-maltese-planetary-scavenging-board-game-wins-prestigious-uk-award/>
- Vengeance: So Very Wrong About Games podcast (8:15):  
<https://www.sowronggames.com/223-stroganov>
- Research needs to take root in our society:  
<https://timesofmalta.com/articles/view/research-needs-take-root-society.981227>
- The philosophy of video game Doors: can you handle it?:  
<https://newsbook.com.mt/en/the-philosophy-of-video-game-doors-can-you-handle-it/>

- AI driver can beat some of the world's best players at Gran Turismo:  
<https://www.newscientist.com/article/2307778-ai-driver-can-beat-some-of-the-worlds-best-players-at-gran-turismo/>
- Vengeance: Roll And Fight Is A Frantic Dice Brawler That's Smarter Than It Seems: <https://bigbossbattle.com/vengeance-roll-and-fight-review/>
- Víctor Navarro, el académico divulgador de los game studies:  
<https://vandal.elespanol.com/noticia/1350754350/victor-navarro-el-academico-divulgador-de-los-game-studies/>

## 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)
- Modl.ai co-founded by alumnus Christoffer Holmgard was listed in the top 100 most promising AI companies by CB Insights. 2021.

## Looking to the Future

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. While Malta looks to place itself as a hub for Artificial Intelligence and for Videogame sDevelopment, we still experience a dearth of local interest. This is not solely a problem of the Institute of Digital Games, but of the University as tech-related careers lose out to the more 'traditional' careers in Malta. We still are facing the challenge of penetrating the consciousness of undergraduates in Europe and elsewhere that would be well-placed in applying for our MSc programme. LinkedIn's Emerging job report listed Artificial Intelligence Specialist as the number 1 job this year and in the next 10 years Burning Glass Technologies sees videogame developer as the fastest growing occupation.

When compared to our competitors, we are closing in to their numbers. 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

Occupation	10-yr Projected Growth Rate
Video Game Developer	21%
GIS Specialist	19%
Robotics Engineer	15%
Transportation Engineer	12%
<b>Overall Labor Market</b>	<b>10%</b>

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.

We 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**.

## Appendix A: Publications until 2022

### Books (4)

1. Calleja, G. (2022) *Unboxed: Board Game Experience and Design*. Cambridge, MA: The MIT Press.
2. Gualeni, S. & Vella, D. (2020). *Virtual Existentialism: Meaning and Subjectivity in Virtual Worlds*. Basingstoke, UK: Palgrave Pivot.
3. Yannakakis, G. N., & Togelius, J. (2018). *Artificial Intelligence and Games*. New York: Springer Nature.
4. 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 (37)

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. Calleja, G. Board Game Immersion. In T. Kikkawa, W. C. Kriz and J. Sugiura (eds.), *Gaming as a Cultural Commons: Risks, Challenges, and Opportunities*. Springer (2022).
7. 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
8. 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.

9. 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.
10. 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.
11. Gualeni, S. (2022). "Philosophical Games". In Grabarczyk, P. (ed.), *Encyclopedia of Ludic Terms* (Spring 2022 Edition).
12. Gualeni, S. & Vella, D. (2021), "Existential Ludology and Peter Wessel Zapffe", Navarro-Remesal, V. & Pérez-Latorre O. (eds.) *Perspectives on the European Videogame*. Amsterdam (The Netherlands): Amsterdam University Press, 175-192.
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19. Khaled, R. Questions over Answers: Reflective Game Design. In *Playful Subversion of Technoculture*, Springer, 2015.
20. 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.
21. 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).
22. 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.
23. 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)
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25. 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.
26. 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.
27. J. Togelius and G. N. Yannakakis, "Emotion-driven Level Design," in Karpouzis and Yannakakis, (Eds.) *Emotion in Games: Theory and Praxis*, Springer, 2016.
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30. Van de Mosselaer, N & Gualeni, S. (2022, forthcoming), "What is a Non-Human Narrative?", Holloway-Attaway, L. and O'Dwyer, N. (eds.) *Non-Human Narratives 2021 Art Book*. Pittsburg (PA): Carnegie Mellon Press.
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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. Barthelet. Matthew, Antonios Liapis and Georgios N. Yannakakis: "Open-Ended Evolution for Minecraft Building Generation," in *IEEE Transactions on Games*, 2022 (accepted). PDF BibTex
4. 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.
5. Eladhari M. P., The Mind Module - Using an Affect and Personality Computational Model as a Game-play Element, *IEEE Transactions on Affective Computing*, 2014
6. Calleja, G. "Will Love Tear Us Apart: Adapting the Lyrical to the Ludic", *CounterText*, Vol 2 Issue 2, *Edinburgh University Press*. Scotland.
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9. Gomez Maureira, M.; Westerlaken, M.; Janssen, D.; Gualeni, S.; Calvi, L. 2014. Improving Level Design Through Game User Research: A Comparison of Methodologies. in *Entertainment Computing* (Elsevier). 2014. Vol. 5, n. 4, 463-473. DOI:10.1016/j.entcom.2014.08.008
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109. Oliva, C., "Musicking with Digital Games", in *Proceedings of DiGRA: Game, Play and the Emerging Ludo Mix*, August 2019.
110. Oliva, C., "Taiko no Tatsujin: Musical literacy in the Media Mix", in *Proceedings of DiGRA: Game, Play and the Emerging Ludo Mix*, August 2019.
111. Makantasis, K., Antonios Liapis and Georgios N. Yannakakis: "From Pixels to Affect: A Study on Games and Player Experience," in *Proceedings of the International Conference on Affective Computing and Intelligent Interaction*, 2019
112. Makantasis, K., Voulodimos, A., Doulamis, A., Bakalos, N., & Doulamis, N. (2020). Space-Time Domain Tensor Neural Networks: An Application on Human Pose Classification. in *ICPR 2020, International Conference on Pattern Recognition (ICPR)*.
113. Makantasis, Konstantinos, David Melhart, Antonios Liapis and Georgios N. Yannakakis: "Privileged Information for Modeling Affect In The Wild," in *Proceedings of the IEEE International Conference on Affective Computing and Intelligent Interaction*, 2021. PDF BibTex
114. Martinez, H. P. and G. N. Yannakakis "Deep Multimodal Fusion: Combining Discrete Events and Continuous Signals," in *Proceedings of the International Conference in Multimodal Interaction (ICMI)*, 2014 (**Outstanding Paper Award Nominee**)
115. Melhart, David, Antonios Liapis, Georgios N Yannakakis. "Towards general models of player experience: A study within genres." *Proceedings of the IEEE Conference on Games*. 2021.
116. Melhart, D., Antonios Liapis and Georgios N. Yannakakis: "PAGAN: Video Affect Annotation Made Easy," in *Proceedings of the International Conference on Affective Computing and Intelligent Interaction*, 2019.
117. Melhart, D., Ahmad Azadvar, Alessandro Canossa, Antonios Liapis and Georgios N. Yannakakis: "Your Gameplay Says It All: Modelling Motivation in Tom Clancy's The Division," in *Proceedings of the IEEE Conference on Games*, 2019.
118. Ntelia, R.E. (2020). "Play Everywhere: Can We Play in Auschwitz?" *Proceedings of the 2020 DiGRA International Conference*.
119. Ntelia, R.E. (2020). "Romantic Love in Games, Games as Romantic Love". *Proceedings of the 2020 International Conference on the Foundations of Digital Games*, 38, 1–4.
120. Oliva, C. (2017). "On the Ontological Status of Musical Actions in Digital Games." *Proceedings of the 11th International Conference in the Philosophy of Computer Games*, Kraków, Poland,

November 29-December 1. Available  
at [https://gamephilosophy2017.files.wordpress.com/2017/11/oliva\\_pocg2017.pdf](https://gamephilosophy2017.files.wordpress.com/2017/11/oliva_pocg2017.pdf)

- 121.C. Oliva (2017). "On the Ontological Status of Musical Actions in Computer Games" *Philosophy of Computer Games 2017*, Jagiellonian University, Krakow, Poland.
- 122.C. Oliva (2016). "Toshio Iwai: digital games as musical realizations." *Ludomusicology Conference 2016*, University of Southampton.
- 123.Oliva, C. (2015): "Reassessing Otocoky: a forgotten classic in digital games history". Replaying Japan 2015: 3rd International Japan Game Studies Conference, Kyoto.
- 124.Oliva, C. (2015): "Soundscape Analysis of Digital Games". Workshop on Audio for Games and Interactivity. Gamification Lab, Leuphana University, Luneburg.
- 125.Oliva, C. (2014): "Comedic affordances in digital game soundscapes". Society for Cinema & Media Studies 54rd Annual Conference, Seattle, WA.
- 126.Oliva, C. (2013): "Soundmarks in Digital Games Soundscapes". Society for Cinema & Media Studies 53rd Annual Conference, Chicago, IL.
- 127.Oliva, C. (2020). Identifying musical situations in digital games. Ludomusicology Conference 2020, University of Malta.
- 128.Oliva, C. (2020). How musical are game players. Music and the Moving Image Conference XVI, New York University Steinhardt School of Culture, Education, and Human Development
129. Oliva, C (2020). Taiko no Tatsujin: Musical Literacy in the Ludo Mix. ToDiGRA Journal, 5(2), <http://todigra.org/index.php/todigra>
- 130.Oliva, C. (2022). The game "Otogarden" has been selected and will be presented at the Meaningful Play Game Exhibition, to be held at the Meaningful Play Conference (East Lansing, Michigan, October.
- 131.Pacheco, Cristiana, David Melhart, Antonios Liapis, Georgios N Yannakakis, Diego Perez-Liebana. "Discrete versus Ordinal Time-Continuous Believability Assessment." *Proceedings of the ACII Workshop on Multimodal Analyses enabling Artificial Agents in Human-Machine Interaction (MA3HMI)*. 2021.
- 132.Pacheco, Cristiana, David Melhart, Antonios Liapis, Georgios N Yannakakis, Diego Perez-Liebana. "Trace it like you believe it: Time-continuous believability prediction." *IEEE Conference on Games*. 2021.
- 133.Pacheco. Cristiana, David Melhart, Antonios Liapis, Georgios N. Yannakakis and Diego Perez-Liebana: "Trace It Like You Believe It: Time-Continuous Believability Prediction," in Proceedings of the IEEE International Conference on Affective Computing and Intelligent Interaction, 2021. PDF BibTex
- 134.Pacheco. Cristiana, David Melhart, Antonios Liapis, Georgios N. Yannakakis and Diego Perez-Liebana: "Discrete versus Ordinal Time-Continuous Believability Assessment," in Proceedings of the ACII Workshop on Multimodal Analyses enabling Artificial Agents in Human-Machine Interaction (MA3HMI), 2021. PDF BibTex
- 135.Pacheco. Cristiana, David Melhart, Antonios Liapis, Georgios N. Yannakakis and Diego Perez-Liebana: "Discrete versus Ordinal Time-Continuous Believability Assessment," in Proceedings of the ACII Workshop on Multimodal Analyses enabling Artificial Agents in Human-Machine Interaction (MA3HMI), 2021. PDF BibTex
136. Pfau, J., Antonios Liapis, Georg Volkmar, Georgios N. Yannakakis and Rainer Malaka: "Dungeons & Replicants: Automated Game Balancing via Deep Player Behavior Modeling," in *Proceedings of the IEEE Conference on Games*, 2020. **[Nominated for Best Paper Award]**

137. Pinitas, Kosmas, Konstantinos Makantasis, Antonios Liapis and Georgios N. Yannakakis: "Supervised Contrastive Learning for Affect Modelling," in Proceedings of the International Conference on Affective Computing and Intelligent Interaction, 2022. PDF BibTex
138. Pinitas, Kosmas, Konstantinos Makantasis, Antonios Liapis and Georgios N. Yannakakis: "RankNEAT: Outperforming Stochastic Gradient Search in Preference Learning Tasks," in Proceedings of the Genetic and Evolutionary Computation Conference, 2022. PDF BibTex
139. Prager, R. P., Troost, L., Brüggjenjürgen, S., Melhart, D., Yannakakis, G., & Preuss, M. (2019, August). An Experiment on Game Facet Combination. In *2019 IEEE Conference on Games (CoG)* (pp. 1-8). IEEE.
140. Prook, J.; Janssen, D.; Gualeni, S. 2015. 'The Negative Effects of Praise and Flattery in Casual Videogames'. Full paper presented at the *2015 Foundations of Digital Games conference* (ACM) in Asilomar, California, United States, June 22-25, 2015
141. O. Sacco, A. Liapis, and G. N. Yannakakis, "A Holistic Approach for Semantic-Based Game Generation," in Proceedings of the IEEE Computational Intelligence and Games Conference, 2016.
142. Owen Sacco, Antonios Liapis, and Georgios N. Yannakakis. 2017. "Game Character Ontology (GCO): A Vocabulary for Extracting and Describing Game Character Information from Web Content," In Proceedings of the International Conference on Semantic Systems, 2017.
143. O. Sacco and G. N. Yannakakis, "Towards Semantic Digital Games for Semantic Digital Libraries," in *Proceedings of the ELPUB 2020 24rd edition of the International Conference on Electronic Publishing*, 2019.
144. Savvani, S., and Antonios Liapis: "A Participatory Approach to Redesigning Games for Educational Purposes," in Proceedings of the 8th International Games and Learning Alliance Conference. Springer 2019.
145. Sarr, J. M. A., Georgios N. Yannakakis, Antonios Liapis, Alassane Bah and Christophe Cambier: "Djehuty: A Mixed-Initiative Handwriting Game for Preschoolers," in *Proceedings of the Foundations of Digital Games Conference*, 2020
146. Schellekens, J.; Caselli, S.; Gualeni, S.; Rutter Bonello Giappone, K. 2020. "Satirical Game Design: The Case of the Boardgame Construction BOOM!". *Proceedings of the 2020 FDG international conference*. Bugibba, Malta, September 15-18, 2020.
147. Sfikas, K. and Antonios Liapis: "Collaborative Agent Gameplay in the Pandemic Board Game," in *Proceedings of the Foundations of Digital Games Conference*, 2020.
148. Sfikas, K., Liapis, A., & Yannakakis, G. N. Monte Carlo elites: quality-diversity selection as a multi-armed bandit problem. GECCO '21, July 10–14, Lille, France, 2021.
149. Sfikas, Konstantinos, Antonios Liapis and Georgios N. Yannakakis: "A General-Purpose Expressive Algorithm for Room-based Environments," in Proceedings of the FDG workshop on Procedural Content Generation, 2022. PDF BibTex
150. Sfikas, Konstantinos, Antonios Liapis and Georgios N. Yannakakis: "A General-Purpose Expressive Algorithm for Room-based Environments," in Proceedings of the FDG workshop on Procedural Content Generation, 2022. PDF BibTex
151. Shaker, N., J. Togelius, G. N. Yannakakis, L. Poovanna, V. S. Ethiraj, S. J. Johansson, R. G. Reynolds, L. K. Heether, T. Schumann, M. Gallagher. "The Turing Test Track of the 2012 Mario AI Championship: Entries and Evaluation," in *Proceedings of the 2013 IEEE Conference on Computational Intelligence and Games (CIG 2013)*, 2013.

152. Shu, T., Liu, J., & Yannakakis, G. N. "Experience-driven PCG via reinforcement learning : a Super Mario Bros study". 3rd IEEE Conference on Games, Copenhagen. 2021.
153. Švelch, Jaroslav, and Vella, Daniel (chairs). "Monstrosity and Games." Workshop at the Central and Eastern European Game Studies Conference 2017, Trnava, Slovakia, September 28-30, 2017.
154. J. Togelius and G. N. Yannakakis, "General Game AI," in Proceedings of the IEEE Computational Intelligence and Games Conference, 2016
155. Togelius, J., N. Shaker, and G. N. Yannakakis, "Active Player Modelling," arXiv preprint arXiv:1312.2936, 2013.
156. Trivedi. Chintan, Konstantinos Makantasis, Antonios Liapis and Georgios N. Yannakakis: "Game State Learning via Game Scene Augmentation," in Proceedings of the Foundations on Digital Games Conference, 2022. PDF BibTex
157. Trivedi. Chintan, Konstantinos Makantasis, Antonios Liapis and Georgios N. Yannakakis: "Learning Task-Independent Game State Representations from Unlabeled Images," in Proceedings of the IEEE Conference on Games, 2022. PDF BibTex
158. Tsalakanidou, Filareti, and Symeon Papadopoulos, Vasileios Mezaris, Ioannis Kompatsiaris, Birgit Gray, Danae Tsaouraki, Maritini Kalogerini, Fulvio Negro, Maurizio Montagnuolo, Jesse de Vos, Philo van Kemenade, Daniele Gravina, Rémi Mignot, Alexey Ozerov, Francois Schnitzler, Artur Garcia-Saez, Georgios N Yannakakis, Antonios Liapis, Georgi Kostadinov. "The AI4Media Project: Use of Next-Generation Artificial Intelligence Technologies for Media Sector Applications." IFIP International Conference on Artificial Intelligence Applications and Innovations. 2021.
159. Trivedi, Chintan, Antonios Liapis, Georgios N Yannakakis
160. Van de Mosselaer, N.; Gualeni, S. 2020. "The Implied Designer and the Experience of Gameworlds". *Proceedings of the 2020 DiGRA international Conference*. Tampere, Finland. June 2-6, 2020.
161. Vasalou, A. and Khaled, R. Designing from the Sidelines: Design in a Technology- Centered Serious Game Project. In the *Proceedings of the CHI Workshop Let's talk about Failures: Why was the Game for Children not a Success?* 2013.
162. Vasalou, A., Khaled, R., Gooch, D., and Benton, L. Problematizing Cultural Appropriation. Proceedings of the first ACM SIGCHI annual symposium on Computer-human interaction in play, CHI PLAY 2014, New York, NY, USA, 267-276.
163. Vella, D. (2019). "Dwelling in Digital Game Worlds." Paper presented at the Digital Games Research Association Conference 2019, Kyoto, Japan, August 6-10.
164. Vella, D. (2019). "To Be Otherwise: The Ec-static Existential Potential of Virtual Game Worlds." Paper presented at the Central and Eastern European Game Studies Conference, Kraków, Poland, September 24-26.
165. Vella, D. (2018). "Play and Ecstase." Paper presented at the 12<sup>th</sup> International Conference in the Philosophy of Computer Games, Copenhagen, Denmark, August 13-15.
166. Vella, D., and Bonello Rutter Giappone, K. (2018). "The City in Singleplayer Fantasy Roleplaying Games." *DiGRA '18: Proceedings of the DiGRA 2018 Conference: The Game is the Message*, Turin, Italy, July 25-28. Available at <http://www.digra.org/digital-library/publications/the-city-in-singleplayer-fantasy-role-playing-games/>
167. Vella, D. (2017). "Action as the Basis for an Aesthetics of Ludic Subjectivity." Proceedings of the 11<sup>th</sup> International Conference in the Philosophy of Computer Games, Kraków, Poland, November 29-December 1. Available at <https://gamephilosophy2017.files.wordpress.com/2017/11/daniel-vella-action-as-the-basis-for-an-aesthetics-of-ludic-subjectivity.pdf>
168. Vella, D. "Who am 'I' in the Game?: A Typology of Modes of Ludic Subjectivity." Paper presented at the *1st Joint DiGRA and FDG International Conference*, Dundee, Scotland, 1-6 August 2016.

169. Vella, D., "The Character of the Ludic Muse," presented at the *Philosophy of Computer Games Conference 2015*, BTK University of Art and Design, Berlin, October 2015. Vella, D., Participation in "Game Hermeneutics," panel presented as part of the Philosophy of Computer Games Conference 2015.
170. Vella, Daniel (2017). "Re-opening Doors, Re-framing Perceptions: Fiction, Worldness and Play." Paper presented at the 5th International Conference in Games and Literary Theory, Université de Montréal, Montréal, Canada, October 20-22, 2017.
171. Voulgari, Iro and Marvin Zammit, Elias Stouraitis, Antonios Liapis, Georgios Yannakakis. "Learn to Machine Learn: Designing a Game Based Approach for Teaching Machine Learning to Primary and Secondary Education Students." *ACM Interaction Design and Children (IDC) Conference*, 593-598. 2021.
172. Voulgari, I., & Yannakakis, G. N. (2019, November). Digital Games in Non-formal and Informal Learning Practices for Science Learning: A Case Study. In *International Conference on Games and Learning Alliance* (pp. 540-549). Springer, Cham.
173. 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.
174. 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.
175. 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.
176. 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.
177. 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
178. Xylakis, Emmanouil, Antonios Liapis, Georgios N Yannakakis. "Architectural form and affect: A spatiotemporal study of arousal." *IEEE Conference on Games*. 2021.
179. 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)**
180. Yannakakis, G. N. and Khaled, R. Village Voices: A Personalised and Adaptive Game for Conflict Resolution. In *Proceedings of FDG 2013*, 2013.
181. G. N. Yannakakis and A. Liapis, "Searching for Surprise," in *Proceedings of the Seventh International Conference on Computational Creativity*, 2016.
182. Yannakakis, G. N., A. Liapis, C. Alexopoulos, "Mixed-Initiative Co-Creativity," in *Proceedings of the 9th International Conference on Foundations of Digital Games*, 2014.
183. 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)**
184. 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)**
185. 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.
186. 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.

187. 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.
188. 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.
189. Zammit, Marvin, Iro Voulgari, Antonios Liapis, Georgios N Yannakakis. "The road to AI literacy education: from pedagogical needs to tangible game design." *Proceedings of the European Conference on Games Based Learning*. 2021.
190. Zammit, Marvin, Antonios Liapis and Georgios N. Yannakakis: "Seeding Diversity into AI Art," in Proceedings of the International Conference on Computational Creativity, 2022. **[Best Student Paper Award]**

## 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

- *Excavation Earth* – (2022)

- Vengeance Roll and Fight (2022)
- Excavation Earth – (2021)
- “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 Zamprogno, 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.
- Doors (the game) (2021) - Available at [doors.gua-le-ni.com](http://doors.gua-le-ni.com), developed with Nele Van de Mosselaer, Diego Zamprogno, Rebecca Portelli, Costantino Oliva, et al. My roles: game designer, writer, project coordinator

#### 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 2013-2022

### Keynotes (66)

1. Barr, P. Got Curious? Keynote at Interface 2013, Carleton University, Ottawa, Canada. April 2013. <http://interface2013.wordpress.com/>
2. Calleja G., "Vengeance: Evolving Systems", Massachusetts Institute of Technology, (2022) Cambridge, MA.
3. Calleja G., "Worlds in a Box", Massachusetts Institute of Technology, (2022) Cambridge, MA.
4. Calleka G., "Bringing Maltese Games to the World", ACM International Cultural Exchanges Series, Arts Council Malta, Valletta (2022).
5. Calleja G., "Games and the Reconceptualisation of Narrative", *Digital Interfaces in Situations of Mobility: Cognitive, Artistic, Game Devices*, Sorbonne, Paris, France. 2014.
6. Calleja, G., Invited Speaker: "The Making of Will Love Tear Us Apart", Ars Electronica Festival 2013, Linz, Austria.
7. 2022, July the 7th: Digital Games Research Association International Conference. Krakow (Poland): 'The Implied Designer and the Experience of Gameworlds' (paper presentation talk with N. V. d. Mosselaer).
8. Gualeni S. 2022, June 30th: European Society of Aesthetics Conference 2022, Talinn (Estonia) 'Playable Aesthetics: On the Representational Aspects of Videogame Doors' (abstract presentation talk with N. V. d. Mosselaer).
9. Gualeni S. 2022, June the 17th: Public online event 'A Multidisciplinary Metaverse Future: From Education, Research and Innovation to Regulation': 'Subjectivity and Being in Virtual Worlds' (invited talk with D. Vella).
10. Gualeni S. 2022, June the 7th: Public event 'Digital Society' in Manchester (UK): 'Subjectivity and Being in Virtual Worlds' (invited talk with D. Vella).
11. Gualeni S. 2022, June the 2nd, 'Questioning Immersion' seminar in Bergen (Norway): 'Existential Immersion in Virtual Worlds' (invited keynote presentation with D. Vella).
12. Gualeni S. 2022, June the 1st, University of Bergen (Norway): 'Ludic Unreliability and Deceptive Design' (invited guest lecture).
13. Gualeni S. 2022, May the 1st: Annual Undergraduate Philosophy Conference at New York University (United States): 'On Fictional Games' (invited talk).
14. Gualeni S. 2022, April the 8th: Eludamos symposium on the futures of games and game studies in Copenhagen (Denmark): 'On Fictional Games' (keynote talk).
15. Gualeni S. 2022, March the 14th: Campus Tech Summit at the University of Malta (Malta): 'The Future of Gaming in Malta' (invited panel).
16. Gualeni S. 2022, March the 5th: Digital Entertainment Conference 2022 at Ritsumeikan University in Kyoto (Japan): 'Why Digital Game Citation Matters' (invited talk).
17. Gualeni S. 2021, December the 15th, DiGRA ESPAÑA 2021 Conference in Mataró (Spain): 'On the Fictional Incompleteness of Digital Gameworlds: The Case of Book Cases' (extended abstract with N. Van de Mosselaer).
18. Gualeni S. 2021, December the 15th, DiGRA ESPAÑA 2021 Conference in Mataró (Spain): 'Fictional Games: An Assessment of the Roles of Games within Fictional Worlds' (extended abstract presentation with R. Fassone).
19. Gualeni S. 2021, December the 15th, DiGRA ESPAÑA 2021 Conference in Mataró (Spain): 'Virtual Doors: on the Representational Aspects of Video Game Objects' (extended abstract presentation with N. Van de Mosselaer).
20. Gualeni S. 2021, November the 17th, DAE - Howest University of Applied Sciences (virtual): 'Game for Thought' (invited panel about educational games).
21. Eladhari, M. P., AI and Game Prototyping, Guest talk at course Artificial Intelligence (EPGY2013), Stanford University, July 2013.

22. Gualeni, S. (2018) April the 20th: CREMO Project Workshop (Waterfront Hotel, Sliema, Malta). 'Philosophy with (and within) the Digital'
23. Gualeni S. Codemotion Milan 2015 conference: 'Transforming Oneself Through the Practice of Game Design' – Nov 2015.
24. Khaled, R. What We Talk About When We Talk About Procedural Content Generation. IEEE Conference on Computational Intelligence and Games, Dortmund, Germany, 2014.
25. Khaled, R. Games and Learning. Annual Conference of the Association of MultiMediaDesign Teachers in Denmark, Middelfart, Denmark, 2013.
26. 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).
27. Liapis A. , "Artificial Intelligence and Player Experience", invited talk at the AI Cafe, virtual (2022).
28. Liapis A. , "Games and Emotion: how AI can bridge the gap between design and experience", keynote at the 7th International Conference on Computer Games; Challenges and Opportunities, virtual (2022).
29. Liapis A. , "Player Experience and Artificial Intelligence: where (virtual) worlds collide", invited talk at the event "A Multidisciplinary Metaverse Future: From Education, Research and Innovation to Regulation"(2022).
30. Makantasis, Konstantinos: Keynote Speaker at the 1st International Conference on Novelities in Intelligent Digital Systems (NIDS) - September 2021
31. Makantasis, Konstantinos: Invited Speaker at the University of West Attica delivering a talk on "Machine Learning for High-Order Data Analysis" - June 2021
32. Vella, D. (2019). "The Promise of Being Otherwise: Keynote paper presented at the 13th International Conference in the Philosophy of Computer Games, St. Petersburg, Russia, October 21-24.
33. 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.
34. Yannakakis G. N. Keynote: SETN 2022 --- 12th Conference on Artificial Intelligence, September, 2022
35. Yannakakis G. N. Keynote: IEEE Conference on Games, China, August, 2022
36. Yannakakis G. N. Keynote: Games and Emerging Technologies Conference (GET2021), Tunisia, December 1, 2021
37. Yannakakis G. N. Keynote: International Conference of the Chilean Computer Science Society, November 2021
38. Yannakakis G. N. Keynote: The 13th International Conference on Management of Digital EcoSystems (MEDES'21), November 2021
39. Yannakakis G. N. Keynote: 9th International Conference on Serious Games and Applications for Health, SeGAH, August 2021
40. Yannakakis G. N. Keynote: XIV Seminar on Digital Games, Education and Communication, June 2021.
41. Yannakakis G. N. Keynote: 3rd International Conference Digital Culture & AudioVisual Challenges, May 2021.
42. Yannakakis G. N. Keynote: AI, Affective Computing and Games Seminar, University of Gothenburg, May 2021.
43. Yannakakis G. N. Keynote: Symposium on Cognitive Computing and Hybrid Intelligence — an interdisciplinary series, November 2020.
44. Yannakakis G. N. Keynote: Games and AI. Technological, Cultural and Societal aspects Workshop, SETN, September 2020.
45. Yannakakis G. N. Keynote: Me and AI: Human Concerns, Artificial Minds, Athens, November 2020.
46. Yannakakis G. N. Keynote: Congresso Futuro, Chile, January 2020.
47. Yannakakis G. N. Keynote: Athens Science Festival, Athens, November 2020.

48. Yannakakis G. N. Keynote: Second China Symposium on Cognitive Computing and Hybrid Intelligence, September 2019.
49. Yannakakis, G. N., Keynote: GaLA conference, Palermo, December 2018.
50. Yannakakis, G. N., Keynote: International Conference on Physiological Computing Systems, Seville, September 2018.
51. Yannakakis, G. N., Keynote: Artificial Intelligence and Intelligent Applications Conference, Rhodes, May 2018.
52. Yannakakis, G. N. Keynote: 3rd Workshop on Emotion and Sentiment in Social and Expressive Media: User Engagement and Interaction, ACII, October 2017
53. Yannakakis, G. N. Keynote: 6th EAI International Conference: ArtsIT, Interactivity & Game Creation, October, 2017
54. Yannakakis G. N., International Summer School on Deep Learning (DeepLearn 2017), Bilbao, July 2017.
55. Yannakakis, G. N. Keynote: Bootcamp on Heart Rate and Galvanic Skin Response as Measures for Assessing Human Experience, Aarhus University, May 2017.
56. Yannakakis, G. N. Keynote: Prometheus Game Jam Athens, June, 2017.
57. Yannakakis, G. N. Keynote: Global Game Jam Athens, January, 2017.
58. Yannakakis, G. N. Keynote: International GameOn Conference, Amsterdam, December 2015.
59. Yannakakis, G. N. Keynote: 15th Conference of Hellenic Psychological Society, Cyprus, May 2015.
60. Yannakakis, G. N. Keynote: 9th International Workshop on Semantic and Social Media Adaptation and Personalization, Corfu, November 2014
61. Yannakakis, G. N. Keynote: International Research-Centered Summer School in Cognitive Systems and Interactive Robotics, Data and Context Analysis, Athens, July 2014.
62. Yannakakis, G. N. Keynote: Conferencia de Ciencias e Artes dos Videojogos, Portugal, November, 2014. (Invitation declined)
63. Yannakakis, G. N. Keynote: Encontro Nacional de Estudantes de Informatica (ENEI) Conference, Aveiro, Portugal, April, 2014.
64. Yannakakis, G. N. Keynote: First Annual Contact Forum of the PROSECCO network, Madrid (El Escorial), February, 2014
65. Yannakakis, G. N. Keynote: The Tenth International Workshop on Agents and Data Mining Interaction, AAMAS 2014 (Invitation Declined)
66. Yannakakis, G. N. Keynote: International Conference on Affective Computing and Intelligent Interaction (ACII 2013), Geneva, September, 2013.

## Other Invited Talks (104)

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/>



32. Gualeni, S. (2018) June the 9th: The Architectonics of Virtual Space (Bibliothek Werner Oechslin, Einsiedeln, Switzerland). 'BIG TROUBLE in Little Cities'
33. Gualeni, S. (2018) May the 14th: Department of Classics & Archaeology (University of Malta). 'BIG TROUBLE in Little Cities'
34. 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.
35. Gualeni, S. 'Virtual Weltschmerz' (invited talk) Coimbra International Conference on the Virtual, University of Coimbra (Portugal). October 2016.
36. Gualeni, S.: 'DOING Philosophy with (and in) Virtual Worlds' (invited talk)
37. University of Porto (Portugal). October 2016.
38. Gualeni, S. 'Giocare sul serio' (panel) FESTIVALETTERATURA, Mantova (Italy). September 2016.
39. Gualeni, S. 'Una Macchina per Esperienze Straordinarie' (invited talk) FESTIVALETTERATURA, Mantova (Italy). September 2016.
40. Gualeni, S., 'Game Design as a Self-Transformative Process' (invited talk) Laguna Beach (CA, U.S.A.). July 2016.
41. Gualeni, S. 'Trasformazione' (interview) Gett1 Podcast series, Ep. 05. June 2016.
42. Gualeni, S. 'University Matters' (radio interview) Campus FM. April 2016.
43. Gualeni S. Guest-lecture at the BTK University of Art and Design of Berlin, Germany 'In-game metaphors: an autumnal reflection'. Oct-2015.
44. Gualeni S. University of Turin, Italy 'ONTO-LOGICAL MACHINES'. Jun-2015
45. 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)
46. Gualeni, S., 2017, November the 23rd: University of Gothenburg (Sweden) 'Experience Machines' (invited lecture)
47. 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)
48. Gualeni, S., 2017, September the 29th: Science and the City (Malta). 'Chicken and egg: philosophical play with thought experiments' (public talk)
49. Gualeni, S., 2017, September the 18th: Game Studies Seminar 2017 (University of Malta). 'Toying around with thought experiments' (lecture)
50. Gualeni, S., 2017, May the 3rd: IT-University Copenhagen (Denmark). 'Toying around with thought experiments' (guest lecture)
51. Gualeni, S., 2017, March the 1st: Café Scientifique (Malta). 'Chicken and egg: philosophical play with thought experiments' (public talk)
52. Gualeni, S., 2017, February the 15th: University of Skövde (Sweden), MTEC research group. 'DOING philosophy with (and within) Virtual Worlds' (invited talk)
53. Gualeni, S., 2017, February the 17th: IT-University Copenhagen (Denmark). 'DOING philosophy with (and within) Virtual Worlds' (invited talk)
54. Gualeni, S., 2017, January the 30th: Radio 2 Malta (PBS). 'Radio Mocha' (radio interview)
55. 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)
56. Gualeni, S., 2016, November the 16th: University of Malta (Malta), Game Lecture Series. 'Experience Machines' (invited talk)
57. Gualeni, Si., 2020, November the 24th: Università Cattolica di Milano, Facoltà di Psicologia (virtual): 'La Stanchezza del Mondo nel Virtuale' (guest lecture).
58. Gualeni, S., 2020, November the 26th: De Koninklijke Academie van Beeldende Kunsten of Den Haag (virtual): 'Virtual World-Weariness' (guest lecture)

59. Khaled, R. Reality Bites, or 10 Things Serious Game Researchers Will Never Admit to Doing but Do Anyway. GDC Education Summit, 2015.
60. Khaled, R. Reflektors. Screenshake Game Festival, Antwerp, Belgium, 2015.
61. Khaled, R. Questions over Answers: Reflective Game Design. Critical Hit, Montreal, 2014.
62. Khaled, R. Questions over Answers: Reflective Game Design. A MAZE Berlin, Germany, 2014.
63. Khaled, R. Reflective Game Design. Pecha Kucha Night, Valletta, Malta, 2014.
64. Khaled, R. Gamification Panel. Creativity Meeting Point 2013, Bilbao, Spain, 2013.
65. Khaled, R. Digital Games in Malta Panel. 5th Workshop in Information and Communication Technology. SmartCity, Malta, 2013.
66. Liapis, A. "Mixed-initiative Design, Designer Modeling and Game Development" at the Sapienza University of Rome (2015)
67. Liapis, A. "AI-assisted Game Design" at the Dagstuhl Seminar 15051: Artificial and Computational Intelligence in Games: Integration (2015)
68. Liapis, A. "Interactive Creativity of Man and Machine" (translated title) at the School of Fine Arts, University of Athens (2015)
69. Liapis, A. "Absurdist Procedural Content Generation" at the Future of PCG symposium, IT University, Copenhagen (2014)
70. Liapis, A., "Computational Game Creativity" at the Computer Science Annual Workshop Malta (2014)
71. Oliva C., Invited to hold a Workshop on Audio for Games and Interactivity. "Soundscape Analysis of Digital Games". Gamification Lab, Leuphana University, Lüneburg, 2015
72. Oliva, C., "The Musicking of Electroplankton", in *Replaying Japan*, August 2019.
73. Oliva, C., "Ergodic Musicking", in *Ludomusicology*, April 2019.
74. Schellekens, J. (2019). "Xtreme Yoga: Eye Fight Bad Vibes." MITA Emerging Technologies Lab. Malta Information Technology Agency, Blata l-Bajda, Malta. 25 November.
75. Schellekens, J. (2019). "Make Hay While the Sun Shines: Designing a Critical Board Game." Malta International Games Festival. 23 November.
76. Schellekens, J. (2019). "Artificial Intelligence Research at the Institute of Digital Games". THINK Soapbox. 9 July.
77. Spiteri Monsigneur, L., Oliva, C., "The Acousmatic Situation in Digital Games", in *Mapping Spaces, Sounding Places: Geographies of Sound in Audiovisual Media*, March 2019.
78. 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.
79. 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.
80. 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.
81. Vella, D. "Virtual Subjectivities." Lecture series "Game Studies: Wie aus Computerspielen
82. Forschungsgegenstände werden", German Academic Scholarship Foundation (December 2021).
83. Vella, D. "Existential Immersion." Presentation at Varieties of Immersive Experience Seminar, Berlin, Germany, 2 July 2022.
84. Yannakakis G. N., AI Forward Forum, October 2022.
85. Yannakakis G. N., European Space Agency (ESA), Advanced Concepts Team (ACT), Seminar on AI and Games, June 2021
86. Yannakakis G. N., Autodesk, AEC IF Team, Seminar on Quality Diversity in Architecture, June 2021
87. Yannakakis G. N., Athens Game Festival, Athens, October 2018.
88. Yannakakis G. N., Serious Games Conference, Hannover, CEBIT, June 2018.
89. Yannakakis G. N., Computer Games: Challenges and Opportunities conference (CGCO), Isfahan, February 2018

90. Yannakakis G. N., Dagstuhl seminar on Artificial and Computational Intelligence in Games.  
Invited Speaker, November 2017
91. Yannakakis G. N., Foundation for Research and Technology Hellas, Greece, March 2017
92. Yannakakis G. N., Technical University of Crete, Greece, March 2017
93. Yannakakis G. N., Affective Computing Group, Media Lab, MIT, Boston, May 2016
94. Yannakakis G. N., Northeastern University, Boston, May 2016
95. Yannakakis G. N., Banff workshop on Computational Modelling in Games, Banff, Canada.  
Invited Speaker, May 2016.
96. Yannakakis G. N., Imperial College London, December 2015.
97. Yannakakis G. N., University of Concepcion, Concepcion, Chile, November 2015.
98. Yannakakis G. N., Cyprus University of Technology, Limassol, Cyprus, 2015.
99. Yannakakis G. N., Goldsmiths, University of London, UK, 2014.
100. Yannakakis G. N., University College London, UK, 2014
101. Yannakakis G. N., Dagstuhl seminar on Artificial and Computational Intelligence in Games.  
Invited Speaker, 2015.
102. Yannakakis G. N., Sapienza University, Rome, Italy, 2014
103. Yannakakis G. N., Summer School: Creativity and Games in Education, Crete, 2013.
104. Yannakakis G. N., University of Technology, Sydney, School of Software, 2013.



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