

**Proceedings of the
16th European Conference on
Games Based Learning**

ECGBL 2022

Hosted By

**Lusófona University
Lisbon, Portugal**

6-7 October 2022

**Edited by
Conceição Costa**

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ECGBL Preface

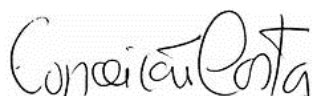
These proceedings represent the work of contributors to the 16TH European Conference on Games Based Learning (ECGBL 2022), hosted by Lusófona University, Lisbon, Portugal on 6-7 October 2022. The Conference Chair is Conceição Costa, and the Programme Chairs are Filipe Luz and Nuno Fachada, all from Lusófona University.

ECGBL is now a well-established event on the academic research calendar and now in its 16th year the key aim remains the opportunity for participants to share ideas and meet the people who hold them. The scope of papers will ensure an interesting two days. The subjects covered illustrate the wide range of topics, from game design to differences and benefits of both digital and board games and augmented reality as literacy tools and pedagogies of learning, wellbeing and gender in gaming are also addressed in ECGBL2022.

The opening keynote presentation is given by Petros Lameris, Coventry University, UK, on the topic of *Designing Serious Games through Research: A Relational Perspective*. The second day of the conference will open with an address by Patrícia Gouveia, Lisbon University Fine Arts Faculty [Faculdade de Belas-Artes da Universidade de Lisboa, ITI/LARSyS FBAUL], will talk about *Eco gaming: How feminism and play are key to changing the world*.

With an initial submission of 168 abstracts, after the double blind, peer review process there are 85 Academic research papers, 5 PhD research papers, Masters Research papers and 3 work-in-progress papers published in these Conference Proceedings. These papers represent research from Australia, Austria, Belgium, Canada, China, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, India, Indonesia, Iran, Ireland, Italy, Mexico, Norway, Portugal, Slovakia, South Africa, Spain, Sweden, Switzerland, Taiwan, Thailand, The Netherlands, UK, USA and Vietnam.

We hope you enjoy the conference



by Lusófona University
Lisbon, Portugal
October, 2022

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Biographies

Conference and Programme Chairs



Conceição Costa is an Associate Professor at Lusófona University and Principal Researcher at the Centre for Research in Applied Communication, Culture, and New Technologies (CICANT) in Lisbon, Portugal. She is a PhD in Communication Sciences - Media Studies from FCSH-NOVA University. She has been conducting research and publishing on game-based learning approaches in school context as well children game creation and its impact in multiple literacies. Currently, she is the Principal Investigator of GBL4deaf - Game-based learning for deaf students, funded by FCT and LISBOA2020 (2019-2022) and ASDdigital - Distance learning training for secondary education teachers: using visual thinking as a method to teach digital skills to students with Autism Spectrum Disorder (ASD), funded by ERASMUS+ (2021-2023).

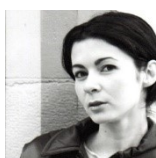


Filipe Costa Luz is a PhD in Communication Sciences - Media Arts Studies (FCSH-NOVA University), coordinates Videogames MSc, Ba and is vice-chair of Communication Design Ba at Lusófona University. He lectures digital post-production for film, television, games and animation, developing research activities in projects of communication science, Design and media arts, with the special focus on Culture and Creativity Industries, and Cultural Heritage. His work integrating media technologies at Hei-Lab (<http://www.hei-lab.ulusofona.pt>) and MovLab (<http://www.movlab.ulusofona.pt>) it's demonstrative of the relevant experience in cross-media projects that evolve him in academic or professional work for the entertainment, design or communication area.

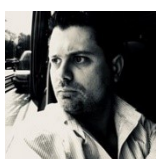


Nuno Fachada is an Assistant Professor at Lusófona University and a researcher at the Cognitive and People-centric Computing Laboratories (COPELABS). He is currently teaching Programming and Artificial Intelligence (AI) at the Videogames BA, and Research Software at the Doctorate in Computing - New Media and Pervasive Systems. Nuno's main research interests lie in Artificial Intelligence (AI), Modeling and Simulation, and Computer Science Education. He completed his degree in Electrical and Computer Engineering from Instituto Superior Técnico / Lisbon (IST) in 2005, and went on to pursue a master degree in the same institute. During this period (2006-2008), Nuno was a teaching assistant at IST, lecturing subjects such as Programming, Digital Systems and Computer Architectures. He successfully defended his PhD thesis in 2016 (IST), and after a year as a postdoc, moved to his current position at Lusófona University/COPELABS.

Keynote Speakers



Patrícia Gouveia is Associate Professor at Lisbon University Fine Arts Faculty [Faculdade de Belas-Artes da Universidade de Lisboa, FBAUL] and an integrated member of ITI – Interactive Technologies Institute / LARSyS, Laboratory for Robotics and Engineering Systems, IST. Co-curator of the *Playmode* exhibition (MAAT 2016-2019). Works in Multimedia Arts and Design since the nineties. Her research focuses on playable media, interactive fiction, and digital arts as a place of convergence between cinema, music, games, arts, and design. More information here: <https://fbaul.academia.edu/PatriciaGouveia/CurriculumVitae>.



Petros Lameris is an Assistant Professor at the School of Computing, Electronics and Mathematics and a Senior Researcher at the Centre of Post-Digital Cultures at Coventry University, UK. His research interests span the areas of games science research in general and within the research strand of investigating how learning and teaching in

Science Technology, Engineering and Mathematics (STEM) may be enhanced with the use of games. He has worked as a researcher in European and National Research and Innovation projects exploring the use of technology in learning as well as the integration of games and digital content for developing authentic and meaningful learning experiences. Petros has been awarded prestigious research awards for carrying out research on serious games design (SRHE) and on investigating the use of artificial intelligence in education (British Academy).

Mini Track Chairs



Stavroula Andreopoulos is a Professor, Teaching Stream, in the Department of Biochemistry at the University of Toronto. In 2017, she was recognized by the Faculty of Medicine for her multi-year contribution to undergraduate teaching with the Sustained Excellence and Innovation in Life Sciences Education Award.



Fábio Dias (he/him) has a Bachelor's Degree in Psychological Sciences from ISPA-IU and a Master's Degree in Cybertherapy and Neurocognitive Rehabilitation from Lusófona University. Currently enrolled as a PhD student in Clinical Psychology at Lusófona. Fábio is also a Game Developer and Project Manager at Human-Environment Interaction Laboratory (HEI-Lab), where he integrates a multidisciplinary team of researchers to further boost scientific knowledge in the field of cyberpsychology and to deploy technical solutions for field practitioners.



Ronald Dyer is currently EMBA-Director & Senior University Teacher in the department of Executive & Professional Education at SUMS with over 20 years of project management experience across financial service, education, agriculture and energy focused organizational transformation initiatives. His research focuses on serious games, gamification and play with a specific interest in the use of these tools for improved risk-based thinking practices within projects as well as strong interest in artificial intelligence, theories of play for pedagogical innovation and ideation to support general learner improvement & retention.



Ana Rita Farias completed her PhD in Psychology in December 2013 from ISCTE-Instituto Universitário de Lisboa (ISCTE-IUL). Currently, she is an Auxiliary Researcher and Invited Assistant Professor at Hei-Lab: Digital Human-Environment Interaction Lab. During her career, Professor Farias has held research positions and visited as a guest researcher both in psychology and in business and economics departments. She began her research career studying social psychology – multimodal perception and situated approach to human cognition. Over the last few years, she has pivoted her research agenda from pure Psychology to Behavioural Economics.



Micaela Fonseca holds a PhD in Physics. Micaela is Principal Researcher at HEI-Lab (Digital Human-Environment Interaction Lab) and assistant Professor at the ECATI, Lusófona University. Micaela has been engaged in several VR-based simulation projects, she is co-founder of VR4NeuroPain and Games for Good. She has published several scientific papers in ehealth and serious games.



Panagiotis Fotaris is Principal Lecturer and Course Leader for Digital Games Development at the University of Brighton, UK. He is Senior Fellow of the Higher Education Academy and has previously held positions at King's College London, University of East London, University of West London, Abertay University, and University of Macedonia. A game-based learning evangelist with a diverse background that combines computing with applied arts, games, and music, Panagiotis focuses his research on the pedagogic

potential of escape rooms and immersive technology in the context of computing and design education. His current research projects include designing educational escape rooms for cybersecurity awareness training and information literacy.



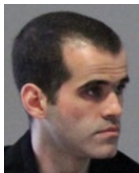
Phil Lopes is an integrated researcher with HEI-Lab and an Auxiliary Professor at Lusófona University (Portugal), and is involved in the development of virtual environments for therapeutic and research purposes. Phil's research interests are human biofeedback data and virtual environments in the fields of Digital Game AI, Affective Computing, Neuroscience and Game Design.



Dominic Mahon is a research fellow at Coventry University in the UK. His research interests lie in the development of competencies, capabilities and resilience through playful approaches to learning. He has worked at universities in the UK Vietnam, Turkey and Kazakhstan over a teaching career of over 20 years.



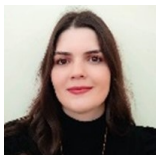
Nour El Mawas is an Associate Professor in Educational Sciences at [Université de Lille](#) and [CIREL](#) Laboratory ([Trigoneteam](#)). Her research interests are in the Technology Enhanced Learning (TEL) Field, she works on various application fields like crisis management, clinic reasoning, sustainable development, STEM and Computational Thinking. Since 2019, she has supervised two PhDs on modelling and predicting the learning optimal experience in TEL and co-designing serious games by nursing students. She also worked on the design and the evaluation of AutoThinking, a Computational Thinking educational game.



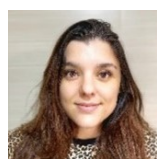
Pedro Neves is an integrated researcher with HEI-Lab and an Auxiliary Professor at Lusófona University, teaching on Interactive Narratives and Game Design. Pedro's research interests are game design vocabularies and conceptual tools, and he is involved in the development of game creation toolkits for education and healthcare.



Jorge Oceja is a teacher, ed. psychologist and M.A in instructional design by California State University (Fulbright Scholarship). In 2017 he obtained his PhD with the thesis "Design of Game Experiences to Promote Civic Competence". In this process he completed academic residencies at the Engagement Lab at Universidade do Minho, the Center for Applied Game Research at Aalborg University in Copenhagen, and the Gamification Lab at Leuphana University in Luneburg. He has taught in Elementary and Secondary in Spain, UK and USA and he is an Associated Professor and researcher at University of Cantabria.



Helena Pereira is a Clinical Psychologist and trainer, she coordinates the course "Games as educational tools" at the IPLUSO's School of Education. In the last years, she has been involved in several national and international projects that use board games applied to serious contexts, and has organized and facilitated training courses for teachers and other professionals that intervene in the educational, social and cultural areas. She believes games can be an incredible tool for working with individuals or groups and tries to spread their potential. She is interested in using board games to promote mental health, inclusion, and educational board game design.



Carla Sousa (she/her) has a Bachelor's Degree in Psychology, a Master's Degree in Clinical and Health Psychology, and a Post-graduate degree in Applied Neuropsychology from Lusófona University. She is a PhD student in Communication Sciences and part of the Centre for Research CICANT. Carla published several papers as

an author and co-author in peer-reviewed journals, and presented at conferences. She was part of several national and international funded projects in related fields.



Stina Thunberg is a PhD-student, teacher, and a developer at AchTech Learning Lab at Luleå University of Technology, Luleå, Sweden. Her work is focusing on games and literacy in L1 and L2 for K-12 and teacher education. Her thesis explores gamification in literature education and for spoken game-based reading. Game based reading is about making a game out of traditional reading of printed fiction books using the narrative of

the novel.

Author Biographies

Daisy Abbott is an interdisciplinary researcher based in the School of Simulation and Visualisation at Glasgow School of Art. She specialises in serious games and game-based learning, in particular, games for developing research skills or critical thinking. She has developed workflows for co-design of serious games with teachers, schoolchildren, and professionals.

Mifrah Ahmad is a PhD scholar (submission in July 2022) in Faculty of Arts & Education at Deakin University Melbourne Australia. She completed her master's in computer science and BSc in ICT in Malaysia. She is a reviewer, educator, software engineer, and a sessional lecturer (IT, Design, Communication) currently at Deakin University.

Muriel Algayres is a PhD fellow in the Department of Architecture Design and Media Technology at Aalborg University Copenhagen, Denmark. She holds a M.A in Educational science, and her research interest resides in technology-enhanced learning, active learning and game-based learning.

Rasmus Vestergaard Andersen is a research assistant at the department Of Sports Science and Clinical Biomechanics at SDU. Rasmus is teaching on the innovation and entrepreneurships track focusing mainly on teaching students to innovate movement-based design solutions in the domain of sport, game, play and learning. He is special interested in researching and developing innovative play and movement-based concepts.

Zakia Arif is a Master's student at the University of Saskatchewan. She completed her Bachelor's degree in Interactive System Design from the University of Saskatchewan. Her main research area is game-based learning using different tools/ methods.

Michaela Arzmann is a doctoral researcher at Utrecht University focusing on how immersive learning environments can be used to interest children with diverse backgrounds for chemistry.

Arlette Audiffred_Hinojosa was born on 1975/22/01 in Uruapan Michoacán México. After getting her bachelor degree in Chemistry at the Instituto Tecnológico y de Estudios Superiores de Monterrey She obtained a Master Degree in Education, now she is working at PrepaTec Morelia as a Teacher of the Multicultural High School Program and collaborates in innovation projects.

Riikka Aurava is a doctoral researcher at Centre of Excellence in Game Culture Studies at Tampere University, Finland. Her PhD examines the usability of game jams in schools. She is also interested in tabletop role playing games, dice, actual plays, live streamers and YouTubers, audiences, and everything to do with books, dragons, and coffee.

Masiar Babazadeh is a lecturer-researcher at the Scuola universitaria professionale della Svizzera italiana (SUPSI), Dipartimento formazione e apprendimento (DFA), Locarno, Switzerland. He received his PhD in computer science from the University of Lugano in 2017. His main research areas include game development, game-based learning, and computational thinking.

Chitra Balakrishna, Ph.D, SFHEA, CeH is the Program leader for Cybersecurity at Open University. As part of her recent projects funded by Higher Education Academy and Department for Education, she has explored novel techniques such as game-based learning, behavioural analytics, and artificial intelligence to address challenges in cyber security skills training and human-errors in cyber security.

Sissy Barakari, is an Electrical and Computer Engineer (NTUA), MA in Digital Design and Interactive Applications (Middlesex University), a new-media artist and a cello player. She is finishing her

Postgraduate Studies in Audiovisual Arts at Ionian University. Her main research area is the utilization of humanistic theories and methods in the design of digital applications.

Nathalie Zetzmann Barz is a researcher and doctoral student at the Faculty of Educational Sciences at Saarland University. She received her master's degree in Psychology from Saarland University in 2019 and her main research topics are self-regulated learning in university context, game-based learning, as well as attitudes towards e-learning.

Dennis Bauer is a group leader for energy-flexible manufacturing and energy data analytics at Fraunhofer Institute for Manufacturing Engineering and Automation IPA in Stuttgart, Germany. He studied mechanical engineering (bachelor of engineering) and manufacturing engineering (master of science). With his group, he conducts research at the intersection of data-driven energy and manufacturing process optimization.

Byron Bunt is a senior lecturer in the Faculty of Education of the North-West University and is part of the research unit Self-Directed Learning. He is the subject leader for History Education. His research niche encompasses cognitive education, as well as game-based learning, specifically focusing on developing students' creative and critical thinking via gamification approaches.

Lance Bunt is a lecturer from South Africa. He received his Communications degree from NWU in 2013, an Honours degree in Communication & Media studies in 2014, and a Master of Science degree in Computer Science & Information Sciences in 2020. His research areas include game-based learning, design thinking, serious games, and learning design, among other topics.

Gavin Baxter is a lecturer in Computer Games Development at the University of the West of Scotland. His research activities include the use of serious games for teaching and learning purposes. His interests also reside in applying serious games as an immersive approach towards informing students about 'hard' and 'soft' skill sets required for employability.

Luca Botturi holds a PhD in Communication sciences from the University of Lugano. He worked in field and research projects in educational technologies in Switzerland, Italy, Canada, Spain and the United States of America. He is currently Professor in Media in education at the Scuola universitaria professionale della Svizzera italiana in Locarno.

Philip Bourke is Programme Director for Interactive Digital Art and Design and Lecturer in Computer Games Development with South East Technology University. Philip has over 30 year's industry experience in development, working with international organisations. Philip founded the national computer games programming festival, Games Fleadh. Philip's is currently pursuing a PhD at University College Cork.

Guido Bruinsma finished his Ph.D. at the University of Twente on a simulation model of complex multi-organization collaborative work. Building on his passion for research methodology, technology and human behavior Guido's focusses on the development and implementation process of game based interventions and health, performance, and data driven systems for esports performance.

Joan Casas-Roma is a Postdoctoral Research Fellow at Universitat Oberta de Catalunya, where he works on AI and ethics, learning and games. Previously, he worked at Falmouth University on the study of moral gameplay and morality systems in digital games and taught and led different modules on design, theory and computing for games.

José Carlos Piñero Charlo is a lecturer at the Cadiz University, teaching Didactic of the Mathematics and with expertise on educational research and teacher's professional development. He holds a PhD

in Physics, has edited a monograph about Game-Based-Learning trends and combines material's science research with STEAM and GBL research for learning/teaching mathematics.

Zaryab Chaudhry is a media architect and technology expert at eTeach- Netzwerk Thüringen, at Center for Institutional Development of Bauhaus-Universität Weimar. She is responsible for interface and technology for e-learning, e-teaching and e-assessment in ten Thüringen universities in Germany. With her background in Media, her work is based on hybrid and digital collaborative educational settings.

Vasiliki Choleva works as a primary school teacher. She received her PhD in ICT in Education from National and Kapodistrian University of Athens in 2022. She develops Educational Programs with applications in ICT. Her research interests include digital games and applications of ICT in Education.

Wei-Kuo Chou is an emergency physician at National Taiwan University Hospital, Taiwan. He is the president of Taiwan Emergency Management Association since 2018. He has been involved in education of disaster medicine and hospital emergency management for 15 years. His main research areas are disaster medicine, hospital emergency management, and disaster exercise.

Mike Coffey is a senior lecturer in environmental analytical chemistry. He has published a free-to-use educational board game ("Green Chemistry"), has helped students at NTU design a number of other board- and card-game GBL resources, and is co-chair of the university GBL group.

Luuk Collou finalized his PhD in 2020 at the University of Twente during which he developed and tested a simulation model and serious game for strategic human resource management (HRM). Currently Luuk is working as an associate lector for the research group strategic HRM of Saxion University for applied Sciences in Enschede, the Netherlands.

Rocío Elizabeth Cortez Márquez is a marketing professor and academic coordinator at Tecnológico de Monterrey, Mexico. She has more than 10 years of experience in classroom, hybrid and distance educational models.

Mike Cosgrave lectures on the BA in Digital Humanities & IT and the MA program in Digital Humanities, and the online MA in Digital Cultures at University College Cork.

Andre Almo de Moraes Coutinho is a PhD student at the Technological University Dublin. Andre is investigating how adaptation can make games more anxiety-aware. He is a biomedical scientist interested in neuroscience, science communication, education and game design. Andre wants to create tools and games to make science education more engaging and fun.

Bojan Crnković is employed as an associate professor at the Faculty of Mathematics, University of Rijeka. His scientific interest is in the field of applied mathematics. He is the author of numerous lectures and workshops aimed at the popularisation of mathematics and has participated in the design and organization of several popularization projects and activities.

Vedrana Mikulić Crnković is an associate professor of mathematics at Faculty of Mathematics, University of Rijeka. Her scientific interest is in the field of combinatorics. In addition to scientific and teaching activities, she is very active in science promotion and involved in several projects dealing with teaching of mathematics.

André Czauderna is an education researcher working at the Cologne Game Lab of TH Köln, where he coordinates and develops the BA and MA Digital Games as well as teaches player research. His research interests include educational games, digital games as political education, game design education, learning in communities of practice, and qualitative methods.

Kostas Diamantis works at the Onassis Foundation as a Software & Media Administrator, with responsibilities ranging from the production of the live streaming broadcasts of Onassis Foundation's Stegi events, to the administration and supervision of its digital multimedia systems as well as the management of the cultural media archive.

Marta Ferreira Dias has a PhD in Economics from the University of Warwick, UK. She is an Assistant Professor in the University of Aveiro. She lectures under graduated and graduated courses. Presently, she is an integrated member of the research unit on Governance, Competitiveness and Public Policies (GOVCOPP). She is a member of research teams of the University of Aveiro participating in several European sponsored projects.

Roberto Di Paolo is a Post-Doc in Economics at IMT School for Advanced Studies Lucca (Italy). His research focuses on Experimental and Behavioral Economics, especially on applying experimental methodologies to study the effectiveness of Game-based educational programs and Games for Social Changes. He is also an ordinary member of the Game Science Research Center.

Jessica L. Dominguez Alfaro is an early researcher of the ETN-Charming, and she is based at KU Leuven, Belgium. The main goal of the CHARMING project is to create games and immersive learning environments to motivate, teach and train current and future chemists and chemical engineers.

Kelly Donovan is currently a Lecturer of English for Academic Purposes at NYU Shanghai teaching: "The Science of Friendship" and "The Final Boss: Defeating Social Issues in Gaming." She was an English Language Fellow with the U.S. Department of State (2018-2020). She received her MA in TESOL from the Middlebury Institute of International Studies (2017).

Francis Dubé is a Full Professor in Instrumental Pedagogy at Laval University. His research interests are Music Game-Based learning, Music Engagement, and Creativity. His research is subsidized by the FRQ-SC, SSHRC, Global Affairs, and CFI. He is the director of the [University of Youth Music Play\(ers\) \(UJM\)](#).

Michael Dumin holds a PhD research position at KU Leuven, Belgium. He graduated with a Master's degree in Chemistry at the University of Regensburg in Germany and has experience in school tutoring. His main research interests comprise early interest development in chemistry and other natural sciences as well as child-oriented gamification of chemical concepts.

Stine Ejsing-Duun is associate professor in technology, design, and learning at Aalborg University, where she Co-Directs the Center for Applied Game Research (CEAGAR). She explores how playful, digital, and tangible design processes can be used as forms of inquiry promoting creativity, critical thinking, and engagement.

Lars Elbæk is an associate professor and researcher in the unit Learning and Talent in Sport (LET'S), SDU. Lars lecturer and do research in movement interaction and design research and has several years of experience in sport, physical movement, learning, and sport pedagogy. His special interest is movement-based design methods in sport and movement innovation.

Tiffany Fioroni studied Biology at the University of Basel where she obtained a Master degree. She then qualified to teach natural sciences in secondary schools. She is currently a teacher in natural sciences at DFA (SUPSI), a scientific collaborator and an assistant for the course in digital technologies and media.

Sophie Fischer is a scientific assistant at the University of Applied Sciences Würzburg-Schweinfurt in Germany. In her research project and PhD she conceptualizes three educational modules to support regional companies in climate adaptation. Here, she focuses on organizational development, organizational learning, and the design and impact of leadership.

Panagiotis Fotaris is Principal Lecturer at the University of Brighton. He demonstrates a deep understanding of the pedagogical, social, and cultural issues affecting the adoption of new learning technologies. His research interests focus on the pedagogic potential of escape rooms, videogames, and virtual/augmented environments in the context of higher education.

Hugo Kenji Fukumura Pérez. Student of Industrial and Systems Engineering, member of the Innovation and Educational Research Group of the School of Engineering and Sciences of the Central South zone. Interested in educational innovation in order to make changes in the teaching and learning of future generations, to implement technology in the educational system and enhance the knowledge imparted.

Sonja Gabriel works as a professor for media literacy at University Teacher College Vienna/Krems (Austria). Her primary focus of research is on digital game-based learning and using serious games and gamification for teaching different subjects at school and university as well as evaluation of various projects for learning with games and game-design approaches.

Dr. Garay teaches at the City University of New York. He is dedicated to improve the academic experience of students utilizing videogames as tools to boost engagement and understanding of chemistry. He realized that mathematics became the gatekeeper for students to choose STEM careers. If math trouble goes away, interest for STEM subjects must increase. "

Marco Gilardi is a Lecturer in Computer Games Development at the University of the West of Scotland and holds a PhD in Informatics from the University of Sussex. His research focuses on XR applications to education, health, industry, and cultural heritage. Dr Gilardi is recipient of the Scottish Knowledge Exchange Heroes Award 2022.

Stefan Göbel holds a PhD in computer science from TU Darmstadt and has longterm experience in Graphic Information Systems, Interactive Digital Storytelling, Edutainment applications and Serious Games. Dr. Göbel is academic councilor and lecturer at TU Darmstadt and heading the Serious Games research group.

Hillary Gould is pursuing her PhD in Information Science and Learning Technologies at the University of Missouri. Her research interests include virtual reality learning environments, game-based learning, attitudes and perceptions about video games in the classroom, serious games & simulation design, and cultivating stealth learning opportunities using existing digital games.

Catherine Grundy is a Senior Lecturer at the University of Brighton and co-founder of Friendly Fox Design Ltd. Her primary research interests are in social innovation, product and interaction design, solving wicked design problems, participatory methods and, most recently, the use of location based games and AR to encourage outdoor play and learning in natural environments.

Marcia Campos Gouveia has a Graduate Degree in International Relations, with a specialization in Diplomacy and Area Studies. She is currently attending a Master's in International Relations and Diplomacy. She is also collaborating with GILT, at ISEP.

Thomas Hainey is the Programme Leader of Computer Games Development at the University of the West of Scotland. Thomas has published extensively on Serious Games and Games-based Learning

and runs an honours year Serious Games module. His specialisms include: assessment integration, pedagogical content integration and evaluation of Serious Games.

Thorkild Hanghøj; Professor of Games and Learning (Aalborg University, Copenhagen), where he Co-Directs the Center for Applied Game Research. Heads the GBL21 project, exploring how students can develop 21st Century Skills based on game design activities. Holds a PhD on design and use of educational games. Research areas: games and dialogic education, games and design, and games and teacher roles.

Jérôme Hernandez is a Ph.D student affiliated with Sorbonne University and French National Center for Scientific Research in the MOCAH team. He is supervised by Thibault Carron and Mathieu Muratet (both associate Professor). His main area is the assessment of behavioural profiles relying on gamification and serious game approaches.

Henry Himmelstoss is researcher and project leader at the Fraunhofer Institute for Manufacturing Engineering and Automation IPA since 2019 where he is working in the department competence centre for Digital Tools in Manufacturing.

Niklas Humble is a PhD student at the Department of Computer and System Science at the Mid Sweden University in Östersund, Sweden. Research interests include Programming education, Design science, AI, Learning analytics, and Game-based learning.

Nashwa Ismail has MSC and PhD in Education from Southampton University in educational Technologies and she is a Fellow of The Higher Education Academy. Currently, she is a lecturer in School of Education- Durham University in the UK. In research, she took different leading roles in world-wide including Indonesia, Kenya, Malaysia, Myanmar, Thailand, The UK and USA.

Thorsten Kodalle lectures on security policy (Command and Staff College of German Armed Forces), focus; (Strategic) Wargaming, Critical Infrastructure and Cyber. Member of NATO System Analysis Study Groups “Distributed Wargaming in a COVID 19 world” and “Multi-Domain Wargaming”. Experienced facilitator of manual wargaming - operational level for courses of action analysis, operational analysis, operations research, serious gaming and matrix wargaming.

Nikolaus Koenig is a game and media scholar with a background in communication studies and constructivist theory. He currently works as a researcher and lecturer at the University of Krems’ Center for Applied Game Studies, where he is concerned with games and play theory, media ethics, mediated democracy, and serious game design.

Alvin Kwan obtained his PhD in Computer Science from the University of Essex in 1997 and has taught IT-related courses at the Faculty of Education, the University of Hong Kong since 2001. His key research interests are game-based learning, information management, ICT in education, learning and teaching of technology subjects, and computational intelligence.

Angelika Lau is a doctoral candidate and a research associate at the Department of Human Resource Management at the University of Duisburg-Essen, Germany. Her main research areas are performance management and leadership in the digital era, focusing on challenges related to digital transformation and innovative approaches in the context of business and education.

Dr. Thomas D. Lagkas is Assistant Professor at the International Hellenic University. His research interests are in the broader area of IoT with more than 110 publications at a number of widely recognized scientific journals and conferences. Moreover, he actively participates in the preparation, management, and implementation of several EU funded research projects.

Søren Lekbo has an MSc in sports and health from the Department of Sports Sciences and Clinical Biomechanics at SDU. He is currently a research assistant in the research unit Learning and Talent in Sport. His interest is to utilize bodily experience in the design process to create engaging and exciting movements.

Georgios Liapis : Ph.D. Candidate (Aristotle University,Thessaloniki). Received his master's in AI (Aristotle University,Thessaloniki, 2021). Graduated in 2019 from the Department of Information Sciences (University of Macedonia) with a degree in Applied Informatics. His main research interests span the fields of Machine Learning, Deep Reinforcement Learning, video games, gamification, serious games, human intelligence, and personalities testing.

Christoph Lürig is a professor of game programming at the university of applied science in Trier. He holds a Ph.D. in computer science and is a former game programmer with credits including AuqaNox, Splinter Cell, and Army of two 40th day. His research interest covers serious games, simulation, extended reality, and reinforcement learning.

Joachim Majors (he/him), B.Ec Information Systems, Certified Usability Analyst (CUA) (2012, Human factors International). A usability and user experience specialist at Experience Lab, Faculty of Education and Welfare Studies, Åbo Akademi University. Consults companies and organizations about Human-Centered design development processes. He plans and conducts usability and user experience studies for companies and organizations.

Lilia Marcelino: Assistant professor of psychology and researcher at CICANT - Lusofona University. Received her Education PhD from the Institute of Education (Lusofona University, 2015). She is a psychologist involved in training primary education professors to identify and intervene in mathematics difficulties. Main research areas are mathematical learning and game-based learning and helping children with mathematical learning difficulties.

Astrid Marin is a PhD student in music education at Laval University (Quebec, Canada). Her doctoral project focuses on documenting a learning activity based on the co-creation of music learning games with young students. More precisely, her project aims to describe how this activity calls upon students' creativity and engagement towards this type of activity.

Melinda Mathe is a doctoral candidate at the Department of Computer and Systems Sciences at Stockholm University, Stockholm, Sweden. She has an MSc in International and Comparative Education and also a background in Information Technology for Learning. Her research focuses on the use of digital games and simulations in education.

Bruce M. McLaren is a Research Professor at Carnegie Mellon University and past President of the International Artificial Intelligence in Education Society (2017-2019). McLaren does research that explores how students can learn with games and intelligent tutoring systems. Prof. McLaren holds a Ph.D. and M.S. in Intelligent Systems from the University of Pittsburgh.

Gloria J. Miller has a doctorate, master's and a bachelor degree and has more than 20 years of project leadership experience. She has authored methodologies and books to implement software engagements and modernize organizations. Gloria is founder of the IT and management consultancy company maxmetrics.

Christiane Molina is a professor and researcher of the Strategy and Leadership Department at EGADE Business School, Tecnológico de Monterrey and she is Academic and Research Director of the Conscious Enterprise Center. She specializes in strategy and sustainability and holds a Ph.D. degree in Management and an MBA from EGADE.

Maris Morel works in Tallinn University, Institute of Ecology on international projects related to sustainability, education and game-based learning as a research project assistant. She has received a BSc in Sustainable Development.

Luca Morini is Assistant Professor at the Centre for Global Learning (GLEA) of Coventry University. Luca's main areas of interest are critical pedagogy, systems thinking and co-creative research methodologies. Luca publishes widely on the diverse themes of digital and critical pedagogy, game design and learning, ecology of education, decolonisation and research methodology.

Peter Mozelius is a senior lecturer and researcher, working at the Department of Computer and Systems Science at the Mid Sweden University in Östersund, Sweden. Research interests are in the areas of Information systems, Technology enhanced learning, Game-based learning, and Programming education.

Sandra Mühlböck: Professor of Industrial Management and Product Development (University of Applied Sciences Upper Austria) and has several years of practical experience in the field of R&D management accounting. Research areas are management and project accounting and business model development. Since 2018, she has been increasingly involved in the topic of gamification and edutainment.

Lorena Müller is a game designer and -developer working for the research project "AusWege" at Hochschule RheinMain, Germany, which is developing digital serious games on the topic of Intimate Partner Violence (IPV).

Mathieu Muratet is assistant professor in computer science at INS HEA and member of the MOCAH team at LIP6 laboratory (Sorbonne University). His research topics focus on Serious Games used for learning purposes. He is interested in Serious Games to study their design and to analyse learner's traces.

Ekaterina Muravevskaia is a researcher in Human-Centered Computing field. She also worked in the IT Industry for five years. She received her PhD in computer science from University of Florida in 2021. Ekaterina's research is about using virtual reality technologies for developing empathy in young children.

Iolie Nicolaidou is an Assistant Professor in Emerging Technologies for Learning, at the Department of Communication and Internet Studies (Cyprus University of Technology). She holds a Ph.D. in Educational Technology from Concordia University (Canada). Her research interests revolve around emerging technologies and the evaluation of their impact on learning and motivation.

John Nietfeld: The author team includes scholars and graduate students from North Carolina State University and The Pennsylvania State University who study metacognition, self-regulated learning, and learning from expository text. In their work they employ emerging technologies and game-based learning to implement interventions that support student interest, engagement, and academic achievement outcomes.

Jorge Oceja is a teacher, ed. Psychologist, M.A in instructional design and Ph.D. in Game Studies. He has been the director of the Fundación Botín educational program and he has worked extensively in the public and private sector. He has taught in Spain, UK, and USA. He works at the University of Cantabria.

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