

Editorial Leveling Up!

JUST over a month ago, I had the honor to be appointed the new Editor-in-Chief (EiC) of IEEE TRANSACTIONS ON GAMES (ToG) journal. This appointment comes with feelings of gratitude and responsibility. I feel gratitude for the work of Julian Togelius—the EiC that successfully established this journal four years ago—and the scientific communities that supported him on the way. Thanks to their efforts, IEEE ToG is nowadays considered one of the premier venues for academic work in the larger area of technical games research. I also feel a great deal of responsibility that is tied to the EiC role. As I, at the time of writing, still learn the administrative and practical details of my new role, I would like to share some of my ideas and plans that I feel will take this journal to new heights.

Video games are not only key drivers of research and technological advancements such as those in the areas of graphics and animation, artificial intelligence (AI) and human–computer interaction (HCI), they also form an ever-growing and maturing medium that is nowadays used to teach and train, enhance our understanding about our world and ourselves, improve our cognitive and emotional skills, help us discover new medications, design the buildings, museums and cars of tomorrow, empower our creative and expressive capabilities, and drive positive behavioral change. Based on the above, one might argue that video games are 1) perhaps the most important domain to develop AI algorithms for, contributing directly to gameplaying agents, procedural content generation, user modeling, and affective computing; and 2) the most popular and challenging domain to test and advance machine learning, computer vision, control, Big Data, and generative systems research. Beyond the intersection of AI and HCI, games and simulated environments may act as the launchpad for groundbreaking research in medical sciences, manufacturing, audiovisual productions, interactive media, architecture and construction, the Internet of Things, aviation, cultural heritage, education, and art. In many ways, the recently spotlighted *metaverse* will contain many of the core elements that video games introduced and have offered to people for decades: massively multiuser interactive worlds combined with efficient user interfaces and supported by sophisticated AI.

My primary aim as the new EiC of IEEE ToG would be to further enhance the multidisciplinary nature of the journal and broaden its scope to adjacent areas of research. The article contributions of IEEE ToG would come from the current disciplinary subareas of technical games research, the various subfields of AI (machine learning, planning, search, robotics)

and graphics as applied to games, as well as contributions from the broader area of HCI involving games, including affective computing, user interfaces, usability, website design, advertisement and marketing research, playful interaction, serious games and intelligent tutoring systems, computational art, virtual and augmented reality research, user modeling, gamification, and so on.

The new inclusive IEEE ToG is a journal for all technical and engineering aspects of games research. Beyond the sister IEEE CoG conference—that the journal is tightly associated with—IEEE ToG welcomes submissions from research communities within the broader game research scene (FDG and CHI Play conference communities), AI and games (CoG and AI-IDE), affective computing (ACII, ICMI, and FG), computational creativity (ICCC), computational intelligence and evolutionary computation (IEEE WCCI and GECCO), human–computer interaction (CHI), intelligent agents (IVA and AAMAS), AI and machine learning (NeurIPS, AAAI, ICML), speech processing (INTER_SPEECH), psychophysiology and user modeling (UMAP), graphics and VR/AR (ACM SIGGRAPH, IEEE VR), and game-based learning (ICALT, MIG, AIDE). The list above is obviously far from being inclusive of all scientific communities that use games as a central or peripheral domain for their research.

In my view, a healthy IEEE ToG is a journal that features the right balance of not only technical papers, brief contributions, and survey papers but also vision papers that set the next milestones for this multidisciplinary community. In addition, more and wider-scoped special issues are required to increase the journal's visibility to other adjacent areas of research adding value to the journal in the long term. Indicative topics of interest that could be revisited or introduced to the readership, include, but are not limited to, game affective interaction, player experience, computational game creativity, AI-assisted game development tools, game-based learning, game testing and evaluation, and game narratives. It is expected that special issues at the intersections of communities would bring submissions from people generally not identifying themselves within the IEEE ToG community. Similarly to other IEEE TRANSACTIONS journals, the practice of dedicating a special issue to the best of IEEE CoG papers (conference-to-journal) should be enabled as it will be adding further value to the success of the journal. If you have an idea about a special topic that needs to be featured in this journal feel free to talk to us!

The short-term plan is to generally hear more from us. The social media campaigns of the journal will disseminate key outcomes of IEEE ToG to the core readership of the journal

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but will also aim to reach entirely new readers. Scientists in HCI, machine learning, computational intelligence, psychology, affective computing, digital art, architecture and design, cultural heritage, education (among other disciplines) will be informed about the current state of the art in games research. They will also be informed about the current standards and benchmarks of the community, the degrees to which games can help us improve technology, the ways technology can help us enhance games and, in turn, the ways game research can advance all abovementioned domains.

IEEE ToG is to become an interdisciplinary scientific and technical journal of the highest caliber, addressing a growing number of problem domains of huge and increasing relevance for the economy and contemporary society. Let us all work

together to further elevate the impact, prestige, and recognition of this unique multidisciplinary journal. Thanks to the editorial assistants—Deboshmita Bhaumik and Jasper Schellekens—the devoted multidisciplinary editorial board, the reviewers, and ultimately you, the readers of this journal, we can make it happen! If there is one journal your best work in games should be submitted to, you just found it!

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Georgios N. Yannakakis (Senior Member, IEEE) received the Ph.D. degree in informatics from the University of Edinburgh, Edinburgh, U.K., in 2006.

He is currently a Professor and the Director of the Institute of Digital Games, University of Malta (UoM), Msida, Malta, and the Research Director of modl.ai (Malta branch). Prior to joining the Institute of Digital Games, UoM, in 2012, he was an Associate Professor with the Center for Computer Games Research, IT University of Copenhagen, Copenhagen, Denmark. His work has been cited broadly. His research has been supported by numerous national and European grants (including a Marie Skłodowska-Curie Fellowship) and has appeared in *Science Magazine* and *New Scientist* among other venues. He has authored or coauthored more than 300 papers in the areas of his research interests, which include artificial intelligence, computational creativity, affective computing, advanced game technology, and human–computer interaction.

Prof. Yannakakis is currently the Editor-in-Chief of IEEE TRANSACTIONS ON GAMES and an Associate Editor for IEEE TRANSACTIONS ON EVOLUTIONARY COMPUTATION. He was an Associate Editor for IEEE TRANSACTIONS ON GAMES, IEEE TRANSACTIONS ON AFFECTIVE COMPUTING, and IEEE TRANSACTIONS ON COMPUTATIONAL INTELLIGENCE AND AI IN GAMES. He has been the General Chair of key conferences in the area of game artificial intelligence (IEEE CIG 2010) and games research (FDG 2013, 2020). He was the recipient of several rewards journal and conference publications, which include the IEEE TRANSACTIONS ON AFFECTIVE COMPUTING Most Influential Paper Award and the IEEE TRANSACTIONS ON GAMES Outstanding Paper Award.