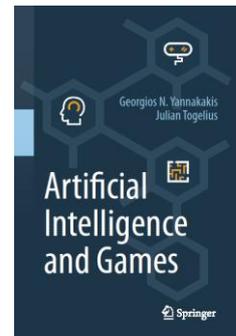


Georgios N. Yannakakis [University of Malta]

Julian Togelius [New York University]

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ISBN [978-3-319-63518-7](https://www.springer.com/978-3-319-63518-7)



Overview

This is the first textbook dedicated to explaining how artificial intelligence (AI) techniques can be used *in and for* games. After introductory chapters that explain the background and key techniques in AI and games, the authors explain how to use AI to play games, to generate content for games and to model players.

The book will be suitable for undergraduate and graduate courses in games, artificial intelligence, design, human-computer interaction, and computational intelligence, and also for self-study by industrial game developers and practitioners. The authors have developed a website (<http://www.gameaibook.org>) that complements the material covered in the book with up-to-date exercises, lecture slides and reading.

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Authors

[Georgios N. Yannakakis](#) is an Associate Professor at the Institute of Digital Games, University of Malta (UoM). He received his Ph.D. in informatics from the University of Edinburgh in 2006. He was previously an Associate Professor at the Center for Computer Games Research at the IT University of Copenhagen. His research lies at the crossroads of artificial intelligence, computational creativity, affective computing, and human-computer interaction with an emphasis on the domain of games. He has published over 200 journal and conference papers in the aforementioned fields, his research has been supported by numerous national and European grants, and it has been featured in Science Magazine and New Scientist among other publications. He is an associate editor of the IEEE Trans. on Computational Intelligence and AI in Games and was an associate editor of the IEEE Trans. on Affective Computing (2009-2016). He was the general chair of related key conferences such as IEEE CIG (Computational Intelligence and Games) and Foundations of Digital Games (FDG).

[Julian Togelius](#) is an Associate Professor in the Dept. of Computer Science and Engineering of New York University, and a codirector of the NYU Game Innovation Lab. He was previously an Associate Professor at the Center for Computer Games Research, IT University of Copenhagen. He works on all aspects of computational intelligence and games and on selected topics in evolutionary computation and evolutionary reinforcement learning. His current main research directions involve search-based procedural content generation, game adaptation through player modelling, automatic game design, and fair and relevant benchmarking of game AI through competitions. He is the Editor-in-Chief of the IEEE Transactions on Games.

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Comments

“Artificial intelligence and games have been inextricably linked since the dawn of the computer era. This book provides a unique and entertaining review of the interplay between them.”

[Murray Campbell, co-creator of Deep Blue]

“Finally with this book by two of the world’s most accomplished experts at the intersection of games and AI, students can benefit from a comprehensive introduction that reaches well beyond the narrow scope of traditional NPC AI ... all this knowledge in a single textbook is truly a milestone for the practice of AI in games and will help to encourage innovation in the area from a new generation of practitioners.”

[Kenneth O. Stanley, University of Central Florida and Uber AI Labs]

“This book provides a thorough overview of AI techniques and their applications in games ... [it] would be a great choice for a game AI class.”

[Michael Mateas, University of California, Santa Cruz, co-creator of Façade]

“Game AI is a vast field of research spanning from locomotion and action planning, to interactive narrative, procedural content generation, computational creativity, and beyond. It's important to finally have an academic textbook that collects current thinking on all of these topics in one place, drawing connections between them ... [the authors] have the intimate familiarity with the field required to weave these disparate topics into a coherent whole.”

[Jeff Orkin, inventor of Goal-Oriented Action Planning, AI lead of F.E.A.R.]

“This book makes an enormous contribution to this captivating, vibrant area of study ... The service to the community will be felt for many years to come: the book provides an easier and more comprehensive entry point for newcomers to the field than previously available, whilst also providing an indispensable reference for existing AI and Games researchers wishing to learn about topics outside their direct field of interest.”

[Simon Lucas, University of London;
founding Editor of the IEEE Trans. on Computational Intelligence and AI in Games]



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