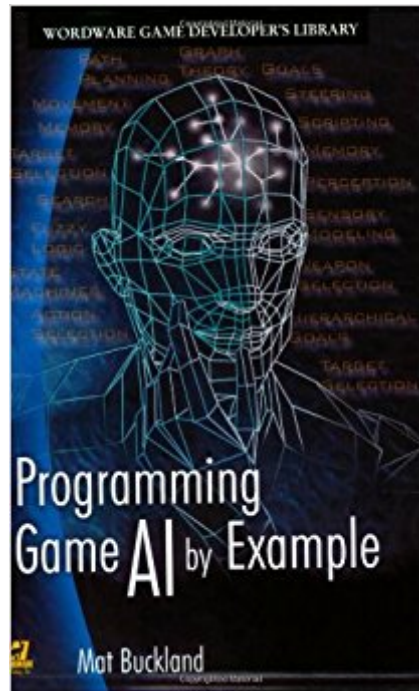




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Programming Game AI By Example (Wordware Game Developers Library)



Synopsis

Programming Game AI by Example provides a comprehensive and practical introduction to the "bread and butter" AI techniques used by the game development industry, leading the reader through the process of designing, programming, and implementing intelligent agents for action games using the C++ programming language. Techniques covered include state- and goal-based behavior, inter-agent communication, individual and group steering behaviors, team AI, graph theory, search, path planning and optimization, triggers, scripting, scripted finite state machines, perceptual modeling, goal evaluation, goal arbitration, and fuzzy logic.

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Customer Reviews

"Programming Game AI by Example stands out from the pack by providing industrial-strength solutions to difficult problems, like steering and goal-oriented behavior. Mat guides the reader toward building a foundation robust enough for real games. This book is a must-have for anyone new to the field, and has tips for the seasoned professional as well. I wish I had read it eight years ago!" ---Jeff Orkin, AI architect, Monolith Productions, No One Lives Forever 2 and F.E.A.R. "...a nice combination of a lot of really useful information, put together in a way that doesn't make my brain leak." ---Gareth Lewis, Project leader, Lionhead Studios, Black & White 2 "Each chapter of Mat's book gently introduces the reader to a fundamental game AI technology before expanding the new idea into a fully formed solution replete with extensive code and clearly worded

examples. The tone of the book is uncomplicated and accessible to the reader, allowing a novice programmer the opportunity to get to grips with the basics of game AI programming by implementing their own systems direct from theory or expanding upon code examples offered to gain understanding in a sandbox environment. Once individual technologies are fully understood, the book goes on to combine these ideas into several complete game environments allowing the reader to understand the relationships between the interacting systems of an overarching game architecture." ---Mike Ducker, AI programmer, Lionhead Studios, Fable "Using easy-to-follow and well-described examples, this book shows you how to use most of the techniques professional AI programmers use. A great introduction for the beginner and an excellent reference for the more experienced!" ---Eric Martel, AI programmer, Ubisoft, Far Cry (XBox) "Programming Game AI by Example is an excellent book for the game programming neophyte, the intermediate programmer, and even the expert - it doesn't hurt to go over familiar ground, does it? The book concisely covers all of the important areas, including basic maths and physics through to graph theory and scripting with Lua, to arm any programmer with the tools needed to create some very sophisticated agent behaviours. Unusually for books of the type, Programming Game AI by Example is solid in its software engineering too, with the example code demonstrating game uses of familiar design patterns. I'd have no qualms about recommending Programming Game AI by Example to any programmer. It's an excellent read and an excellent springboard for ideas." ---Chris Keegan, Technical director, Climax Studios (Solent)

Mat Buckland is a freelance programmer and writer. He became interested in AI when he coded Waddington's Monopoly for the ZX Spectrum way back in the '80s, and over the years his passion for making computers "think" has never faded. He is the author of the book AI Techniques for Game Programming and the founder of ai-junkie.com, a popular web site that specializes in AI tutorials. He is also a member of the AI Interface Standards Committee and co-hosts the AI round table at the European Game Developers Conference.

One Line Synopsis - This book is a must for anyone interested in the topic of AI in games, and it is full of examples that really drive home the lessons being taught. With all the college courses and graduate studies devoted to the field of artificial intelligence, this book could have easily drowned itself in excessive theory. Thankfully, this did not happen. The author is truly able to give concrete examples and demonstrate the applicable methodologies. Not only do the examples given in the text convey the lessons in AI so clearly, they could easily be employed in your own projects. I have

given myself plenty of time not only to read the book, but generate my own AI code inspired from the book. It really is the perfect blend of theory, practice, and examples. If you are looking for an entry level AI book that will also deliver you into the intermediate stages of AI programming, this is the book you have been looking for. I would highly recommend anyone who purchases the book to check out the source code that can be found on the companion website. It not only offers the source code from the book, but also the standalone executables that run the programs discussed. As AI behavior is such a dynamic phenomenon, it really lends itself to view the examples in motion alongside the text. That's why these programs are so helpful. Additionally, one can tell a lot of care was put into constructing these programs to really demonstrate the main point of each topic. As an aside, chapter 2 of this book is an exceptional chapter for those interested in game engine design. It primarily deals with state-driven design and finite state machines, but also discusses game entities and their management along with message handling. While the topics in this chapter deal with AI behavior, their applications go far beyond AI and could easily be applied to many other features of games and software.

Matthew Buckland's book was the second book on Game AI I had read (The first being Behavioral Mathematics). After reading it, I would say that it is a major complement to his other book "AI Techniques for Game Programming". So anybody who thinks this book may simply be a rehash of the AI Techniques book is mistaken. This book will teach you about the basics of Game Programming and the mechanics that go into creating a Game AI Engine. I would recommend it as a great place to start learning about concepts in Game AI. I would also highly recommend reading "3D Math Primer for Graphics and Game Development" before reading this book though. Even though it's a graphics book, it's treatment on the dot product and other linear algebra concepts really helped me grasp the concepts presented in Buckland's book.

I am in the process of reading this jewel and have just finished the math portion of the book. There are some "mathematical" term errors that only a mathematician would catch (usage of the terms function vs. formula, and right triangle vs. right angle triangle comes to mind), and certainly do not deter from his presentation of the necessary subjects. He invokes the great memory mnemonic SohCahToa for trigonometry functions, but fails to spell out what that mnemonic represents (Sin is Opposite over Hypotenuse, Cos is Adjacent over Hypotenuse, and Tan is Opposite over Adjacent in a right triangle). The required vector analysis mathematics portion could have been a cleaner and more precise presentation, but covers all the key points. His examples along with graphs throughout

this chapter do a good job of illustrating the mathematical concepts he feels are important to programming game AI. Because I taught university level mathematics for years, the math portion was rather straight forward for me (other than the misuse of a few mathematical terms/definitions). I would have preferred to give the book 4.5 stars, but that was not an option. If the author covers the material beyond this first chapter as well as he has in the math chapter, then this should be a 'must buy' for anyone interested in the subject, and am very pleased with the purchase of this book.

This is really great book. I agree with all positive review posted before, so I am not going to repeat them. But there are a few drawbacks. 1) There is not explain all pieces of the C++ code. It is clearly explained all about the AI, but many helper objects (i.e. transformation matrix for rotation) are not mentioned in the book and you find them only in the source code. 2) There are C++ source only for Visual Studio 06 and 08. I have big problems to recompile this projects in VS10 (at the end I managed it, but it takes me a lot of time). And of course, If you prefer Linux, you have a problem ... Good news is, that I decided to rewrite all codes from C++ to Java. So, if you are interested, you can find them on [...]. I hope it help somebody :)

I received this book the other day and have been reading it non-stop. I must say that there is much more information in here than what I bargained for. The only bad thing that I would have to say about this book is that all examples are in C++ and assumes you have no engine. Thankfully I have a limited background in C++ and am currently developing in C# so I was easily able to understand it. Probably my favorite feature of this book is the "Math and Physics Primer" in the beginning. It's been a while since I've taken any high level math classes so that was a nice refresher. This book also fails to dive into the more detailed mathematics behind AI behavior but it does explore the programming concepts. Over all I would definitely recommend this book to anyone thinking of venturing into AI Programming, it delivers as promised and so much more!

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