Preface

Welcome to an all new volume of *Game AI Pro*! As with each book in this series, I am proud to deliver brand new material from 50 of the top developers and researchers in the field of game AI. With 42 chapters of innovative techniques and algorithms, I am humbled at the goodwill and sharing of wisdom that this work represents. This book is a testament to the generous community of game AI developers as well as the larger game development community. Everyone involved in this effort believes that sharing information is the single best way to rapidly innovate, grow as developers, and continue to move the game industry forward. We sincerely hope that you will benefit from the insights and wisdom held within this book.

This book is divided into six primary sections. In the first section, "General Wisdom," we have a selection of techniques that generally apply to all games. In the "Architecture" section, we further explore modern architectures such as behavior trees and share architectures used in top games such as *FINAL FANTASY XV*, the *Call of Duty* series, and the *Guild Wars* series. In the "Movement and Pathfinding" section, we explore ways to better smooth paths, avoid obstacles, and navigate 3D space, and present cutting-edge techniques to speed up A* and Dijkstra. The "Tactics and Strategy" section focuses largely on combat decisions made in a wide variety of genres such as RTS, RPG, MOBA, strategy, and tower defense games. In the "Character Behavior" section, we look at individual AI behavior such as character interactions, modeling knowledge, efficient simulation, difficulty balancing, and making decisions with case studies from both commercial games (*Paragon*, *Dragon Age Inquisition*, and *FINAL FANTASY XV*) and indie games (*Project Highrise* and *Talk of the Town*). Finally, we end with the "Odds and Ends" section that contains chapters on specialized AI topics ranging from recommendation systems to random number generation and procedural content generation.

Right now, the game AI community is larger than ever and I want to invite you to discover all of the wonderful resources that are available. In addition to reading about new game AI techniques in the "Game AI Pro" book series, there are annual conferences, which are academic and developer centric, all over the globe. Organized by developers, there is the GDC AI Summit in San Francisco and the Game/AI Conference in Europe.

Organized by academia, there is the AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE) and the IEEE Conference on Computational Intelligence and Games. Outside of events, there are two communities that have also sprung up to help developers. The AI Game Programmers Guild is a free professional group with more than 500 worldwide members (http://www.gameai.com), and there is a wonderful community of hobbyists and professionals at AiGameDev.com. We warmly welcome you to come and hang out with us at any one of these conferences or participate in one of our online communities!