



Community Experience Distilled

Unity 3.x Game Development Essentials

Game development with C# and Javascript

Build fully functional, professional 3D games with realistic environments, sound, dynamic effects, and more!

Foreword by

David Helgason, CEO and Co-founder, Unity Technologies

Will Goldstone



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Foreword

When we began creating Unity, we were just three programmers working on a beautiful little game. There weren't any good game engines that one could license without putting down wads of cash, so we created our own. We eventually decided that we enjoyed the challenge of making great tools even more than making games, and after some soul searching we realized that the tools we had been creating – combined with a simple licensing structure and an open community – had the potential to change the way that developers create, distribute, and play games.

It wasn't always an easy road to where we are today. Ridiculously long days and late nights, gigs serving sandwiches and making websites for law firms, and general hardship. Once, we were told by a potential investor (he passed on the deal) that our dream of 'democratizing game development' had a 1 in 1000 chance of working out. We could think of nothing better to do than take on the odds!

Stuffing insanely complex technology into a polished package, and making it as simple as humanly possible was job one, and so we were thrilled to see the first book about our software, *Unity Game Development Essentials* released in 2009. The book helped many people get off the ground with Unity, and so when Will told me he was due to release an updated edition I was only too happy to be asked to write its foreword. A long standing member of the Unity community, we first met Will back in 2007 when he was teaching game development with Unity at UK based Bournemouth University. He went on to produce some of the first Unity video tutorials for his students and shared these on our forums, helping a generation of early adopters pick up Unity version 1.5 and upwards.

Now working with us at Unity Technologies, Will has retained much of his former career in teaching—helping us to grow adoption by new users through creating training materials, giving talks and keeping active in our community. The new *Unity 3.x Game Development Essentials* you hold in your hand (or read on your mobile or desktop!) is rewritten from the ground up—but holds on to everything that was so nice about the first edition: each part of the original has been expanded, improved or elaborated upon, and it also includes some of the many features we added to Unity since then. You will not only learn about new features however; Will thoroughly walks through the basics, through scripting, learning scripting, and even addresses that perpetual Unity conundrum: *Should I learn C# or Javascript?*—by covering both programming languages in parallel, his book lets you decide what makes the most sense for you.

Whether you are an artist, level designer, or simply a young person choosing game creation as a potential career, this book represents a fantastic start for learning Unity. Starting out by covering the essential elements of 3D, you'll learn everything from scratch—no prior knowledge is assumed, but the book moves at a pace that will keep you turning pages and writing code!

I'd like to personally welcome you to the Unity community, and hope you have as much fun reading this book as we do working on Unity.

David Helgason

CEO & Co-founder, Unity Technologies

About the Author

Will Goldstone is a longstanding member of the Unity community and works for Unity Technologies as a Technical Support Associate, handling educational content, marketing, community relations and developer support. With an MA in Creative Education, and many years experience as a lecturer in higher education, Will wrote the first ever Unity book, the original *Unity Game Development Essentials*, and also created the first ever external video tutorials for the package. Through his site <http://www.unity3dstudent.com>, Will helps to introduce new users to the growing community of developers discovering Unity everyday. He also blogs intermittently at <http://willgoldstone.com>.

I would like to thank the following parties for helping to produce this book, and being generally awesome – Teck Lee Tan (@LoTeKk) for creating the Art Assets in the book; all the Ninjas at Unity Technologies: Rune Skovbo Johansen, Nicholas Francis (@unitynich), David Helgason (@davidhelgason), Joachim Ante, Graham Dunnett, Andy Brammall (@andybrammall), Andy Stark, Charles Hinshaw, Roald Hoyer-Hansen (@brokenpoly), Carl Callewaert (@carlhunity), Chris Pope (@CreativeChris1), Dave Shorter, Mark Harkness (@IAmRoflHarris), Ricardo Arango, Rob Fairchild (@robfairchild), Olly Nicholson, Cathy Yates, Adam Buckner, Richard Sykes, Emil Johansen (@AngryAnt), Ethan Vosburgh, Joe Robins (@JoeRobins) ... and the many more awesome guys and girls I can't fit here!

Plus awesome Unity-powered friends Bob Berkebille (@pixelplacement), Tom Jackson (@quickfingerz), Thomas Pasieka (@thomaspasieka), Cat Burton (@catburton), Mike Renwick (@runonthespot), Mark Backler, Russ Morris (@therussmorris), Jasper Stocker (@jasperstocker), Paul Tondeur (@paultondeur), David Fugère-Lamarre, Benjamin Lee, Steffen Franz, Aaron Grove, Bastien Fontaine. And of course not forgetting Mum, Dad, Rach, Penny, and my awesome friends.

About the Reviewers

Rune Skovbo Johansen has been part of the development team at Unity Technologies since 2009, working on expanding the feature set of the editor and tightening the workflows and interface. He is based in Copenhagen, Denmark. Besides editor work he has developed procedural animation tools, written sections of the Unity documentation, and has been a programmer on several of the official Unity demos.

In general, Rune is passionate about creating solutions that make advanced and cool technology simple to use. He has a creative and cross-disciplinary approach to software development grounded in a Master's degree in Multimedia & Game Programming and an interest since childhood in graphics, animation, and coding.

Rune engages with the game development community online in various forums and blogs and offline through game jams and other events. He has been a speaker at the Game Developers Conference and Unity's own Unite Conference, and has helped organize the Nordic Game Jam.

In his spare time Rune enjoys the outdoor in parks and forests, daily biking, and reading. He also spends time working creatively with graphics and animation, and developing small games. He has a special interest in anything procedural and is persistently trying to find the best way to instruct his computer to generate giant sprawling worlds for him. He writes about his projects at runevision.com.

Mark Backler is a Game Designer who has been working in the games industry for over 5 years. He has worked at EA, Kujju and is currently at Lionhead Studios working on *Fable: The Journey*. He has worked on numerous games including *Harry Potter and the Order of the Phoenix*, *Milo and Kate* and the Bafta award winning *Fable 2*. He can be found on Twitter at @MarkBackler.

I would like to thank Will for writing this book, which has helped me get up to speed with Unity so quickly, Cat for putting us into contact in the first place, the talented and creative people at Lionhead from whom I'm still learning every day, and my friends, especially Anish, Tom and Chuck, and my family for being all round awesome.

David Fugère-Lamarre holds a Computer Engineering degree from the École Polytechnique de Montréal and a Master's degree in Engineering Management from the New Jersey Institute of Technology. His video game development experience started in 2004 when he worked for Behaviour Interactive (Artificial Mind & Movement) in Montreal, Canada as a game programmer on various console titles. In 2007 he worked for Phoenix Studio in Lyon, France again as a game programmer for a console title. In 2009 he co-founded Illogika Studios (<http://illogika.com/>), an independent game development company in Montreal specializing in Unity game development. He also teaches Unity pro training classes at the Centre Nad in Montreal and his involved with local colleges in creating game programming courses.

Bastien Fontaine is a 25 year old French game designer/scripter. He passed a two-year diploma from a university institute of computer science (C++, Java, PHP, SQL, and so on) at Nice, France, then a 3-year diploma on ARIES private school on Game Design/Video game jobs formation. He learned software such as Virtools, Maya, 3DS Max, Photoshop. He finished his studies with a 1-year diploma from "Université Lyon 2" (Gamagora) where he learned Level Design and tools such as Unreal Engine, Unity, Sketch Up, and improved his game design skills.

He worked with Unity at Creative Patterns (Strasbourg, France) to develop for iPhone and at *Illogika Studio* (Montreal, Canada) to develop for the iPhone too.

He also worked at *Illogika Studio* with David Fugère-Lamarre, another reviewer of this book.