Chris Dickinson

Unity 2017 Game Optimization

Second Edition

Optimize all aspects of Unity performance

Packt>

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About the Author

Chris Dickinson grew up in a quiet little corner of England with a strong passion for mathematics, science and, in particular, video games. He loved playing them, dissecting their gameplay, and trying to figure out how they worked. Watching his dad hack the hex code of a PC game to get around the early days of copy protection completely blew his mind! His passion for science won the battle at the time; however, after completing a master's degree in physics with electronics, he flew out to California to work in the field of scientific research in the heart of Silicon Valley. Shortly afterward, he had to admit to himself that research work was an unsuitable career path for his temperament. After firing resumes in all directions, he landed a job that finally set him on the correct course in the field of software engineering (this is not uncommon for physics grads, I hear).

His time working as an automated tools developer for IPBX phone systems fit his temperament much better. Now he was figuring out complex chains of devices, helping its developers fix and improve them, and building tools of his own. Chris learned a lot about how to work with big, complex, real-time, event-based, user-input driven state machines (sounds familiar?). Being mostly self-taught at this point, Chris's passion for video games was flaring up again, pushing him to really figure out how video games were built. Once he felt confident enough, he returned to school for a bachelor's degree in game and simulation programming. By the time he was done, he was already hacking together his own (albeit rudimentary) game engines in C++ and regularly making use of those skills during his day job. However, if you want to build games, you should just build games, and not game engines. So, Chris picked his favorite publically available game engine at the time--an excellent little tool called Unity 3D--and started hammering out some games.

After a brief stint of indie game development, Chris regretfully decided that the demands of that particular career path weren't for him, but the amount of knowledge he had accumulated in just a few short years was impressive by most standards, and he loved to make use of it in ways that enabled other developers with their creations. Since then, Chris has authored a tutorial book on game physics (*Learning Game Physics with Bullet Physics and OpenGL*, Packt Publishing) and two editions of a Unity performance optimization book (which you are currently reading). He has married the love of his life, Jamie, and works with some of the coolest modern technology as a software development engineer in Test (SDET) at Jaunt Inc. in San Mateo, CA, a Virtual Reality/Augmented Reality startup that focuses on delivering VR and AR experiences, such as 360 videos (and more!).

Outside of work, Chris continues to fight an addiction to board games (particularly *Battlestar: Galactica* and *Blood Rage*), an obsession with Blizzard's *Overwatch* and *Starcraft II*, cater to the ever-growing list of demands from a pair of grumpy yet adorable cats, and gazing forlornly at the latest versions of Unity with a bunch of game ideas floating around on paper. Someday soon, when the time is right (and when he stops slacking off), his plans may come to fruition.

> *It's been a long road, from my humble beginnings to where I am today. I owe much of it to all of the friends, teachers, tutors, and colleagues I've met along the way. Their instruction, criticism and guidance have made much of what I have accomplished possible. The rest I owe to my family, particularly my wife and best friend Jamie, who have always been nothing but understanding and supportive of my hobbies, passions and aspirations.*

About the Reviewers

Luiz Henrique Bueno is a certified ScrumMaster® (CSM) and Unity Certified Developer with over 29 years of experience in software development. He has experimented with the evolution of languages, editors, databases, and frameworks.

In 2002, he wrote the book *Web Applications with Visual Studio .NET, ASP.NET, and C#*, at the launch of Visual Studio .NET. He also participated in the development of a Brazilian magazine called Casa Conectada, about Home Automation.

Based on this magazine's project, he started the development of projects focused on the same subject. He has used technologies such as Crestron, Control4, Marantz, Windows Mobile, and Symbian OS, always implementing touchscreen applications.

Since 2010, he has been developing apps and video games for mobile devices, including VR/AR applications. He has already developed many projects for iPhone, iPad, Apple Watch, Apple TV, and Android using Unity, C#, Xcode, Cocoa Touch, Core Data, SpriteKit, SceneKit, Objective-C, Swift, Git, Photoshop, and Maya.

His motto is *"Do not write code for QA, write code for Production."*
You can reach Luiz Henrique Bueno on his personal website.

Dr. Sebastian Thomas Koenig received his Ph.D. in human interface technology from the University of Canterbury, New Zealand, developing a framework for personalized virtual reality cognitive rehabilitation. He obtained his diploma in psychology from the University of Regensburg, Germany, in the areas of experimental psychology, clinical neuropsychology, and virtual reality rehabilitation.

Dr. Koenig is the founder and CEO of Katana Simulations, where he oversees the design, development, and evaluation of cognitive assessment and training simulations. His professional experience spans over 10 years of clinical work in cognitive rehabilitation and virtual reality research, development, and human computer interaction. He has been awarded over $2 million in research funding in the USA, Germany, and Australia as principal investigator and industry partner. He has extensive experience as a speaker at international conferences and as a reviewer of scientific publications in the areas of rehabilitation, cognitive psychology, neuropsychology, software engineering, game development, games user research, and virtual reality.

Dr. Koenig has developed numerous software applications for cognitive assessment and training. For his work on virtual memory tasks, he was awarded the prestigious Laval Virtual Award in 2011 in the Medicine and Health category. Other applications include the Wonderworks Virtual Reality Attention Training in collaboration with the Kessler Foundation, NJ, USA, and the patent-pending Microsoft Kinect-based motor and cognitive training JewelMine/Mystic Isle at the USC Institute for Creative Technologies, CA, USA. Dr. Koenig was awarded the Early Career Investigator Award (2nd place) by the International Society for Virtual Rehabilitation in 2016.

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