

Software Development in the Game Industry

Deck Download

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Myself

- 🍄 5 years at Nintendo in development support
- 🍄 Game localization for 3 years
- 🍄 Currently in UW CS PMP, MSAA



What's it like to be a game developer?

<http://www.youtube.com/watch?v=BRWvfML14ho>

Game Development Teams

 Programmers

 Artists

 Designers, writers, localization staff

 Testers

 Producers, tech directors

Some Engineering Specializations

 Audio

 Networking

 Graphics

 UI

 Physics

 Tools

 Gameplay

 Server/backend

Domain Knowledge

- 🍄 Linear algebra/3D mathematics
- 🍄 Calculus
- 🍄 Artificial intelligence
- 🍄 Graphics
- 🍄 Data structures, algorithms
- 🍄 Complexity analysis, optimization
- 🍄 Architecture/hardware
- 🍄 Networking
- 🍄 Security
- 🍄 Bringing it all together

Tools/Libraries

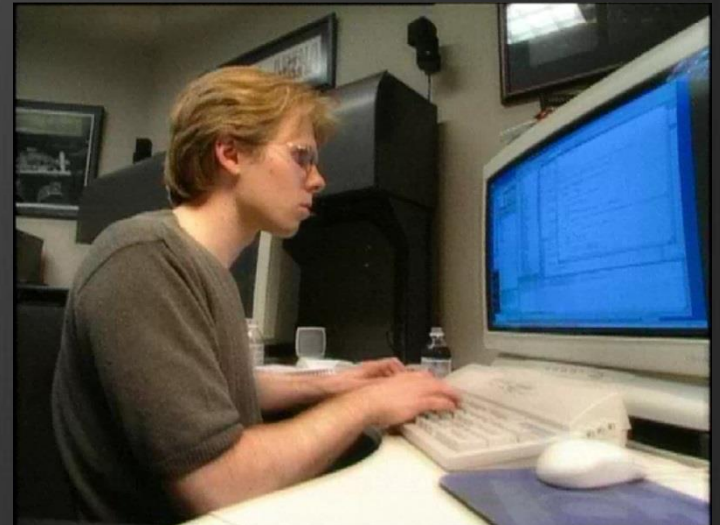
Category	Libraries	Tools
Graphics	OpenGL, DirectX; SDL	PIX, 3ds Max, Maya
Audio	FMOD, SDL	Audacity, Adobe Soundbooth
Networking	Boost.Asio, RakNet, raw sockets	Wireshark
Engines	Unity, UDK, Crytek, Torque	
General	Boost, jQuery	Visual Studio, Eclipse, Perforce, Git, Xcode, Jira

Languages

Platform	Languages
Mobile	C, C++, Objective-C, Java, GLSL, JavaScript/HTML5
Console/PC	C, C++, JavaScript/HTML5, Assembly; GLSL, HLSL
Web	JavaScript/HTML5, Flash
Tools	C#; Python, Ruby
Scripting	Lua, UnityScript, Python, UnrealScript, DSLs

The Good and the Bad

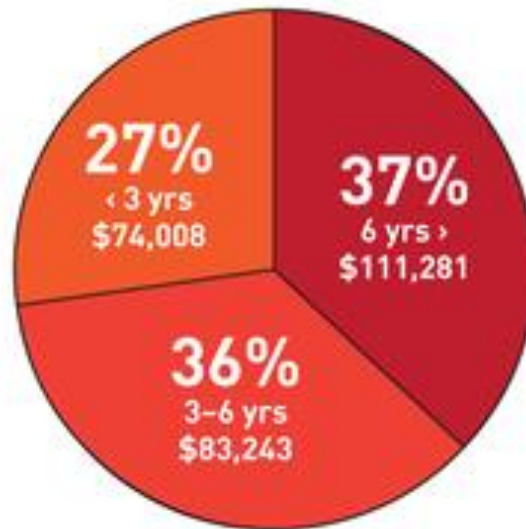
- 🍄 Good pay, benefits, work conditions
- 🍄 Technical growth opportunities
- 🍄 Well-connected industry
- 🍄 Interests often coincide with work
- 🍄 Crunch is common
- 🍄 Volatile job security
- 🍄 Vocal customers



Statistics (from 2012)

ALL PROGRAMMERS AND ENGINEERS

Years experience in the industry



% receiving additional income: 81%

Average additional income: \$15,797

Type of additional compensation received

Annual bonus	45%
Pension/Employer contribution to Retirement plan	41%
Profit sharing	10%
Project/title bonus	24%
Royalties	5%
Stock options/equity	33%

Percent receiving benefits: 97%

Type of benefits received

Medical	95%
Dental	88%
Vision	86%

Gender stats

Gender	% Represented	Average Salary
Male	96%	\$91,969
Female	4%	\$96,136

Console Dev Walkthrough

- 🍄 Apply for license
 - 🍄 Publisher may be needed
- 🍄 Get development hardware/software/docs
- 🍄 Learn all about new SDK
- 🍄 Iteration
- 🍄 Testing
- 🍄 Submissions
- 🍄 Debug/compliance testing
- 🍄 Release
- 🍄 Patching



Where to work?

- 🍄 Indie (e.g., Team Meat)
- 🍄 Small studios (e.g., Mojang)
- 🍄 Major studios (e.g., Rockstar)
- 🍄 Publishers (e.g., Activision)
- 🍄 Platform holders (e.g., Sony)

Major Seattle Studios

 343 Studios

 5th Cell

 ArenaNet

 Bungie Studios

 Epic Seattle

 Microsoft Game Studios

 Nintendo of America/NST

 PopCap Games

 Uber Entertainment

 Valve

 WB Seattle

 Z2Live

Advice (1)

- 🍄 “Make friends. A lot of friends. People tend to hire and work with people they know.” –Engine Programmer, Airtight Games
- 🍄 “Leave your ego at the door.” –Producer, 5th Cell
- 🍄 “Don't be shy! You're surrounded by lots of like-minded people. Run what you're doing by lots of different people; get their opinion! Seek out code reviews!” – Software Engineer, Motiga

Advice (2)

- 🍄 “Technology-wise: learn how a computer works, in particular what cache is. Also, make friends, go to GDC / local events... don't work somewhere that will kill you and then laugh about it.” -Software Engineer, Nintendo
- 🍄 “You will most likely never work on your dream game. But it's ok and still super rewarding to see your work to completion and go through the journey with a bunch of people.” –Technical Artist, Z2Live

Advice (3)

- 🍄 “KEEP SCOPE DOWN.” –Software Engineer, Ember Entertainment
- 🍄 “Drink beer with your co-workers.” –Software Engineer, Uber Entertainment
- 🍄 “Don’t take advice from people on the internet.” –Programmer, ArenaNet








Game Tech for Aerospace Applications

 JPL Human Interfaces Group

 <https://www.youtube.com/watch?v=nrcj-90M-f8>

 <http://www.youtube.com/watch?v=EpfgUnzJE3I>

Links

-  <http://www.gamedevmap.com/>
-  <http://www.gamasutra.com/>
-  <http://www.altdevblogaday.com/>
-  <http://www.reddit.com/r/gamedev>
-  <http://gdcvault.com/free/gdc-13>
-  <http://www-cs-students.stanford.edu/~amitp/gameprog.html>
-  <http://forrestthewoods.com/>

Extra Resources

- 🍄 Indie Game: The Movie
- 🍄 *Introduction to Game Development* (Rabin)
- 🍄 *Game Engine Architecture* (Gregory)
- 🍄 *Real-Time Collision Detection* (Ericson)
- 🍄 UW courses
- 🍄 DigiPen

Questions?