Biography of key software engineer:

**Personal Interest**

I originally became interested in Carmack having watched his interview on the Joe Rogan Experience. Throughout the interview he repeatedly makes reference to the “community”, meaning the coding community, which reflected to me his passion and loyalty to programmers and that for him software engineering is not simply about making money like it is for many other key engineers today. I was fascinated by his approach to game development particularly his determined views to make game modification a first-class feature “it was an explicit top line technical goal for me/to make game modding a first top level feature” [1]. His controversial decision to go against management and directors’ opinions “it wasn’t a super popular idea” [2] and open source the code to many of his games amazed me and clearly illustrated to me his compassion and loyalty to the more hardcore programming gamers and coding community. It also reflects his interesting and unique personality as many artists or creative minds tend to be very particular about people changing or improving their product or creation. Carmack, in contrast, likes to see how far his original creation can be taken to or improved upon which is often done in software engineering with people improving and modifying each other’s code. Unfortunately, the majority of other company’s did not follow Carmack’s decision to open source their games code “I’m a little sad more other companies weren’t able to make that final step” [3] and this has given him legendary status in the gaming world.

**John Carmack**

John D. Carmack (born August 20, 1970) is an American computer programmer, video game developer and engineer. He co-founded id Software and was the lead programmer of its video games Commander Keen, Wolfenstein 3D, Doom, Quake, Rage and their sequels. Carmack made innovations in 3D graphics, such as Carmack’s Reverse algorithm for shadow volumes. In August 2013, he took the position of CTO at Oculus VR.

**Early Life**

Carmack was born in Shawnee Mission, Kansas, the son of local television news reporter Stan Carmack. He grew up in the Kansas City where he became interested in computers at an early age. He attended Shawnee Mission East High School and Raytown South High School in nearby Raytown, Missouri.

**Early Arrest**

Carmack had an interesting childhood marked particularly by an early arrest for breaking and entering and attempted theft at the light age of 14. The event is described in detail in David Kushner’s Masters of Doom . Carmack broke into a school to help a group of students steal Apple II computers. The nature of the robbery displayed Carmack’s amazing intellect and scientific acumen as he concocted a sticky substance of thermite mixed with Vaseline that melted through the windows to allow them to gain entry to the building. Unfortunately for Carmack, an overweight accomplice struggled to get through the hole and set off the alarm . He was arrested and sent for a psychiatric evaluation. The report mentions "no empathy for other human beings" and describes Carmack as "a brain on legs". Carmack was then sentenced to a year in a juvenile home. This incident, although a little disturbing, clearly illustrates Carmack was a special individual.[4][5]

**Career**

Carmack attended computer-science classes for a few semesters at the University of Missouri–Kansas City. He dropped out to pursue contract-programming jobs and then accepted a position at Softdisk, a software-publishing firm in Shreveport, Louisiana. There, he met John Romero, Tom Hall, and Adrian Carmack (no relation), and together they created the first Commander Keen game, Commander Keen 1: Marooned on Mars, which was released as shareware in 1990. Following the success of this game, the group left Softdisk to establish id Software in 1991.

Carmack has pioneered or popularized the use of many techniques in computer graphics, including "adaptive tile-refresh" for Commander Keen, ray casting for Hovertank 3-D, Catacomb 3-D, and Wolfenstein 3-D, binary space partitioning which Doom became the first game to use, surface caching which he invented for Quake, Carmack’s reverse (formally known as z-fail stencil shadows) which he devised for Doom 3, and MegaTexture technology ,first used in Enemy Territory: Quake Wars. Carmack's engines have also been licensed for use in other influential first-person shooters such as Half-Life, Call of Duty and Medal of Honour.

**Open Source Software**

Carmack is a well-known advocate of open source software, and has repeatedly voiced his opposition to software patents, equating them to robbery. “I'm proud that there is "a relative dearth of patent applications for the video game industry” [6]. He has also contributed to open source projects, such as starting the initial port of the X Window System to Mac OS X Server and working to improve the OpenGL drivers for Linux through the Utah GLX project.

Carmack released the source code for Wolfenstein 3D in 1995 and the Doom source code in 1997.When the source code to Quake was leaked and circulated among the Quake underground community in 1996, a programmer unaffiliated with id Software used it to port Quake to Linux, and subsequently sent patches to Carmack . Instead of pursuing legal action, id Software, at Carmack's behest, used the patches as the foundation for a company-sanctioned Linux port. id Software has since publicly released the source code to Quake, Quake 2, Quake 3 and lastly Doom 3 all under the GNU General Public License (GPL). The Doom source code was also re-released under the GPL in 1999. The id Tech 4 engine, more commonly known as the "Doom 3 engine", has also been released as open source license under the GPL. The source code for Hovertank 3D and Catacomb 3D was released in June 2014 by Flat Rock Software with Carmack's blessing. On the other hand, Carmack has several times over the years voiced a sceptical opinion about Linux as a gaming platform; for instance in 2013 he argued for emulation "as proper technical direction for gaming on Linux" and in 2014 he voiced the opinion that Linux might be the biggest problem for the success of the Steam Machine. [7]

**More recently**

On August 7, 2013, Carmack joined Oculus VR as their CTO.[8] On November 22, 2013, he resigned from id Software to work full-time at Oculus VR. Carmack's reason for leaving was because id's parent company Zenimax Media didn't want to support Oculus Rift. Carmack's role at both companies later became central to a ZeniMax lawsuit against Oculus parent company Facebook, claiming that Oculus stole ZeniMax's virtual reality intellectual property. The trial jury absolved Carmack of liability, though Oculus and other corporate officers were held liable for trademark, copyright, and contract violations.

**Personal life & Hobbies**

He met his wife Katherine Anna Kang at the 1997 QuakeCon when she visited id's offices. As a bet, Kang challenged Carmack to sponsor the first All-Female Quake Tournament if she was able to produce a significant number of participants. Carmack predicted a maximum of 25 participants, but there were 1,500. Carmack and Kang married on January 1, 2000 and planned a ceremony in Hawaii. Steve Jobs requested that they would postpone the ceremony so he could attend the MacWorld Expo on January 5, 2000. However Carmack declined. Carmack and his wife had a son in 2004.

Listening to his podcast with Rogan another thing that drew me to look more into Carmack’s life was his interest in cars and in particular, like his coding, his interest in modifying cars. As an avid fan of cars myself it was very absorbing hearing him describe in detail all the modifications he made to his Ferrari’s. Again Carmack displayed his disregard for convention as this is seriously frowned upon by Ferrari “They were all horrified you just don’t do this to a Ferrari”.[9] The detail he uses when depicting how he turbo charged his cars shows his intelligence for mechanical engineering and his passion for building things whether it be engines or software. He first modified his Ferrari 328 with the help of Bob Norwood to get it from its standard 300 horse power to around 500 “after swapping out all the computer electronics, different turbos and eventually I melted the engine when I was at around 500”. [10]. It was very intriguing to listen to Carmack illustrate how he approaches engineering problems and how he compares software and mechanical engineering “That’s the way so many engineering things wind up going, you go until it breaks the you dial it back a little bit”.[11] It was fascinating to me to see how Carmack applies many of the principles and things he has learnt as a software engineer to other aspects and interests in his life.

**Conclusion**

It was riveting delving into and discovering more about John Carmack’s life and career. He truly is a pioneer in software engineering particularly in gaming, graphic and game engine development. His belief in his own convictions and standing up for his beliefs make him an inspiring and appealing figure. He has consistently stayed at the forefront of software development and I eagerly await to see his next great break through with VR gaming at Oculus.

[1] ‘The Joe Rogan Experience’ John Carmack August 29, 2019

[2] ‘The Joe Rogan Experience’ John Carmack August 29, 2019

[3] ‘The Joe Rogan Experience’ John Carmack August 29, 2019

[4] ‘Masters of Doom’ David Kushner April 24, 2003

[5] ‘John Carmack Answers’ Games.slash.org October 15, 1999

[6] ‘Parasites’ John Carmack Slashdot.org June 02, 2005

[7] ‘John Carmack argues against Native Linux Games’ Andy Chalk February 6, 2013

[8] “Facebook in row with games firm over Oculus Rift purchase” Alex Hern The Guardian May 2, 2014

[9] ‘The Joe Rogan Experience’ John Carmack August 29, 2019

[10] ‘The Joe Rogan Experience’ John Carmack August 29, 2019

[11] ‘The Joe Rogan Experience’ John Carmack August 29, 2019