Linus Torvalds

A Biography Of An Influential Software Engineer

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Linus Torvalds is a Finnish, Computer Scientist. His work has hugely impacted the computing industry, by providing the hugely popular operating system, Linux, and the version control system Git, that has, since 2014, surpassed Subversion as the most popular version control system according to the 2014 Eclipse Community Survey. Following a discussion on the work of Torvalds will be a summary of the impact Torvalds has had in today's modern computing world along with a small conclusion to tie up any loose ends. This is a report on one of todays greatest computer scientist's and software engineers in the computing industry.

Early Life

Linus Benedict Torvalds was born in Helsinki, Finland in 1969. He was privileged to a fairly happy childhood, but still faced the separation of his parents, Anna and Nils Torvalds. Afterwards he then lived primarily with his mother and grandparents where a huge emphasis was put on reading. This was consistent with the families presence in media and journalism. His mother, father, and grandfather were all journalists with the grandfather being the editor-in-chief of a Finish newspaper. However, Torvalds' other grandfather (Leo Törnqvist), and his mother's father was one of the first professors of statistics in the University of Helsinki and was a huge influence to Linus as he grew up. We can all thank Leo for the day he brought Linus home a Commodore Vic 20, Linus' first personal computer.

This is what kickstarted Linus' computer science career. As he got bored of all the programs that were present in the computer, Linus decided it was time to create his own using the BASIC programming language. He began to program in assembly language after he mastered BASIC and realised assembly was far more powerful then anything he had used before. Torvalds had found has passions in life when discovering programming and mathematics at his young age and he thus invested days, months and years into them. Spite his fathers best efforts to veer him away from these pursuits, he always had a strong work ethic and continued to develop his talents as far as he could.

The Work Of Torvalds

Linus has made many contributions to the world of computing however his two most notable are the Linus operating system, which got it's name from the original project name of Linus' MINIX, and the version control system Git, which is itself a hugely popular system used by many developers and companies in today's world.

The birth of the Linux OS all started when Linus followed in his parents footsteps and joined college in Helsinki, where he majored in computer science. After he just joined college, Linus bought an IBM computer with a much better CPU and memory capacity then that of what he was used to. However, he was then held back by what he felt was an OS that had not advanced enough to take full advantage of the new Intel CPU he had. He thus preferred the UNIX OS and fortunately for us all, couldn't find a copy for below 5000 dollars except for an OS called MINIX which was designed for education purposes only. This solution was not good enough for Linus as, just with any talented programmer, not having source code available for developers is tiring and frustrating. This was when Linus decided to leave college and pursue in creating his own, open-source operating system Linux.

After Linus developed his first official release, he decided to release Linux under the GPL (GNU General Public License) instead of the more limiting license that he had wished to use before. Torvalds now claims that this was one of his best decisions he has made in developing Linux as it has allowed any interested programmers to study, use, modify, extend and redistribute the OS if they make the source code available for any modified versions that they create and then redistribute at no cost to the interested party. As a consequence of this generous licensing, many people all over the world suddenly became enthusiastic in helping Torvalds develop his Linux operating system. Because of this, Linus had huge amounts of developers writing his OS for him meaning Linux development was for more rapid comparing to before.With contributions from Richard Stallman's Free Software Foundation, MIT, University of California at Berkeley and any other dedicated developers willing to help.

Another one of Linus' great pieces of work was the Git version control system. Git was the version control system designed to take over for The Linux Foundation's development. In the beginning Linus and his team were continually getting frustrated at their source control management solution. They were unable to find a solution that was distributed, provided a way to easily merge source files, and made rid of the problems surrounding who can make changes to files. These problems later became the design criteria for the Git SCM. At some point when his team was having problems with BitKeeper copyright holder Larry McVoy, Linus decided to develop today's modern source control management system, Git. Over three months in 2005, Linus went from starting the Git project, to implementing it successfully meeting all of it's intended criteria, to handing over maintenance of the modern SCM system

to one Junio Hamano. Git is now seen as one of the best SCM systems out there for companies and developers to use.

Impact On The Computing World

Linus Torvalds has been one of the most influential software engineers of our time and his work has been permanently etched onto the face of the computing industry. His operating system has taken off incredibly well and is currently the fastest growing OS on the planet and arguably the single most important piece of software int he world. Major companies like Google, Facebook, Twitter, Amazon and many more are all using Linux and supporting it's development, because of it's lack of cost, great security, superior performance and the freedom it brings to companies with it's open-source nature. These criteria are all a must for the major players in the computing industry and thus have chosen Linux as the core to their infrastructure. Nowadays you'll find it hard to go through your every day life without finding things powered by the Linux OS meaning Linus has not just made an impact to those interested and working in the computing industry, but to millions of people on a global scale.

If this is not enough of an impact, then Linus' Git source control management system has greatly helped today's developers. Whether they are the big developers of major software companies, or just small time studying students, many are using Git due to it's solid performance and ease of use. It is now the most popular SCM in the industry and is continuing to grow. It has also helped give birth to the popular SCM service GitHub. GitHub has now become one of the biggest tools to be used by developers, providing a singular social network for developers and companies to share and maintain their code. It is become a must for software engineers and has allowed them to gain strong reputations among some of the major players in computing.

Linus Torvalds Today

Today Linus continues to work on the Linux kernel full-time under the Open Source Development Lab (OSDL). The OSDL is supported by numerous computer companies whom all have a stake in the Linux operating system. The OSDL believes their mission is in "becoming the recognised centre of gravity for Linux and the central body dedicated to accelerating the use for enterprise computing". He owns and monitors the official Linux trademark, and is responsible for making final decisions regarding what modifications are allowed into the Linux OS. Linus maintains a low profile and will likely continue his role as the head of Linux kernel development in this fashion. He is the leader of the Linux movement and while the OS is still young, it still needs it's father by it's side.