CSU33012-Software Engineering

14333615

SiKai Lu

Richard Stallman-Biography

Richard Matthew Stallman was born on the sixteenth of March in 1953 in New York City (Stallman, n.d.). He is an American free software movement activist and advocator which is known by his initials RMS. His prodigious achievements can be differentiated into three conceptual classes:

1. The beacon of free software movement who leads/co-works with fellas to develop open-source software toolchain
2. Top-level in programming skill
3. Be honest with himself

His first real-world job with computing was writing a numerical analysis program in Fortran for IBM New York Scientific center during the summer in 1970 after his senior year of high school. With his background knowledge of IBM machines, it only took him a couple of weeks to complete this task and spent the rest of the summer writing a text editor in APL and a preprocessor for the PL/I programming language on an IBM System/360 machine. (Williams, 2002)

He began his first academic year at Harvard University in 1970 and participated in the MIT Artificial Intelligence Laboratory and become an active member of the hacker community where his initials, RMS, spread out. After graduating in physics from Harvard in 1974, he decided to purse a doctorate degree in MIT in physics, but one year later, he dropped out to concentrate more on his programming at the MIT AI Laboratory. After 2 years of study under the guidance of Gerry Sussman, he published a paper in the field of AI truth maintenance system about dependency-directed backtracking. As of 2009, this technique Stallman and Sussman introduced is still the most general and powerful form of intelligent backtracking (Russell & Peter, 2009).

During his research in MIT AI lab which was primarily funded by the Defense Advanced Research Project Agency, because of the high-security nature of the project, computer access is highly restricted and under constant surveillance. Stallman criticized this and even found a way to access the computer anonymously by using an empty plain string as password after a password control system was installed by the MIT computer science department. (Levy)

In 1976, the 94th United States Congress issued the US Copyright Act of 1976 triggered many software manufacturers' minds. They stopped distributing the source code of their software and started using copyright laws and restrictive software licenses to prevent competitors from using directly or build upon their code against them. Stallman claimed this series of legal characteristics shift of software industry was a crime against humanity and advocated that software users should have the freedom to share with their neighbors and be able to study and make changes to the software that they use (contributors, n.d.).This statement was often be misinterpreted

as software should be no-cost which is an intentional maneuvering and misleading against him. Stallman, during an interview in 2008, clarified that it is blocking the user's freedom that he believes is a crime, not the issue of charging for software. (Maguire, 2008)This notion came with an experience he had with a newly installed Xerox printer in 1980 which he and his colleagues were refused to access the source code of that printer. Therefore, they cannot adapt the printer to fit their niche which they had done on the older one. This experience convinced Stallman of people's need to be able to freely modify the software they use. (Williams, 2002) The hacker environment in the MIT AI Laboratory Stallman thrived on begun to fragment. Some hackers thought the venture capital-funded approach can help them earn a fortune by publishing proprietary software, so these guys resigned from the MIT AI Laboratory and founded Symbolics with an aid of administrator from the AI Lab. Stallman despised their choices and started to work on his own to clone the output of the Symbolics programmers, with the aim of preventing them from gaining a monopoly on the lab's computers. (Levy)

Stallman inspired by previous experience and become an unpaid visiting professor in Computer Science and Artificial Intelligence Laboratory at MIT in 1984 February. He then delved into the field of GNU project which aims at creating a free operating system compatible with UNIX, thus, UNIX users can easily switch to it. In 1985, Stallman published the GNU Manifesto which indicates his doctrine and calls for other enthusiastic developers contributing to the project. To achieve this goal, Stallman laid down the legal cornerstone for this movement by founding a nonprofitable enterprise that hires free programmers. In 1989, the first version of the General Public License was published and implemented on the GNU Emacs. Since then, the number of software using GPL as licenses started to grow. By the early of the 90s, an entire and self-dependent GNU toolchain, including GNU Emacs, GCC, GNU Debugger and GNU make, were finally well-prepared for their free operating system dream. Since then, GNU team started a kernel called the GNU Hurd which is based on the microkernel Mach. Unfortunately, this development took longer than they ever excepted. The GNU project, after a long run, finally started working reliably in 2001. Stallman remarked that we hope its superior architecture will make free operating systems more powerful. Incidentally, back in 1991, a Finnish student, Linus Torvalds, used the GNU's development toolchain to develop a Linux kernel that fits in the gap in the GNU system. (Stallman, Linux and the GNU System, n.d.). Merging existing toolchain in Linux and combine them together work properly as an operating system is not something trivial, especially when the operating system may run on an enormous variety of hardware. GNU team contributed a lot to make this operating system works. One CD-ROM vendor found that in their "Linux distribution", GNU software was the largest single contingent take account up to 28% of the total source code. (Stallman, Linux and the GNU System, n.d.).

Since the publishing of the GNU Manifesto, Stallman is not hesitant to propagate his ideas towards other people, if any occasion is given. Until 2012, Stallman had already travelled to at least 65 countries around the world, preached the necessity of

free-software movement and the GNU project and spoke about their achievement so far. Stallman held a protest against ATI with placard wrote : “Don’t buy from ATI, enemy of your freedom” in April 2006 which leads to the police being called and the arrest of RMS (tonyw, 2006). Ever since AMD acquired ATI, they have taken steps to look for help from outside the company under the pressure from NVIDIA by making their hardware documentation available for the free software community use. (AMD, n.d.) The choice Stallman make to pick at laptops solely depended on the capability of running with free software at the BIOS level, and stating that "I've campaigned for freedom since 1983, and I am not going to surrender that freedom for the sake of a more convenient computer” (Stallman, Richard Stallman, 2010)

Some people claim that the GPL which Stallman endorses is viruses-like spreading products which compel people to public their code under GPL , unless they don’t invoke any GPL products. Detractors of GNU project are lot who claimed such a thing is definitely not the target user of GNU project. GNU targets the people who identify with the philosophy the open-source community thrive on and who willing to publish their products under GPL, and those people are granted the freedom of using GNU products to build their programming products by the authors of previous GNU products under the GPL. For the other people who disagree, they have the choice not to use any products published under GPL. There are plenty of products do the same job as GNU products do, gcc to Clang, GNU emacs to Visual studio code and so on. Base on this, people have the chance to pick whether or not been exposed to this GNU project. This freedom of choice is not like what we have in social media platforms, people can ostensibly choose another platform if they don’t agree with the terms of service and they don’t have to.

References

AMD. (n.d.). *GPUOpen-Drivers/AMDVLK*. Retrieved from Github: https://github.com/GPUOpen-Drivers/AMDVLK

contributors, W. (n.d.). *Events leading to GNU*. Retrieved from Richard Stallman: https://en.wikipedia.org/wiki/Richard_Stallman

Levy, S. (n.d.). *Hackers.* 1984.

Maguire, J. (2008, 5 31). *Live and Unplugged*. Retrieved from Datamation: https://web.archive.org/web/20170629211002/http://www.datamation.com/osrc/article.php/12068_3737586_3/Richard-Stallman-Live-and-Unplugged.htm

Russell, S., & Peter, N. (2009). *Artificial Intelligence: A modern Approach(3rd edition).*

Stallman, R. (2010, 1 23). *Richard Stallman*. Retrieved from UseThis: https://web.archive.org/web/20110717175618/http://richard.stallman.usesthis.com/

Stallman, R. (2010, 1 23). *Richard Stallman*. Retrieved from usethis.com: https://web.archive.org/web/20110717175618/http://richard.stallman.usesthis.com/

Stallman, R. (n.d.). *A serious bio*. Retrieved from Richard Stallman's Personal Site : https://stallman.org/biographies.html#humorousbio

Stallman, R. (n.d.). *Linux and the GNU System*. Retrieved from GNU Operating System: https://www.gnu.org/gnu/linux-and-gnu.html

tonyw. (2006, 4 27). *Protest against ATI nearly led to the arrest of RMS*. Retrieved from Free Software Foundation: https://www.fsf.org/blogs/community/rms-ati-protest.html

Williams, S. (2002). *FREE AS IN FREEDOM.* Sebastopol, Calif. : Farnham : O'Reilly.