Biography of an Influential Software Engineer

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Overview

George Hotz is a famous Hacker, Creative consumer and Entrepreneur. Hotz became well known at an early age due to his jailbreak unlocking of some of the most iconic and restrictive electronic devises of the 2000's allowing consumers to use their devices in new ways previously not allowed by their creators. In 2015 Hotz set up his own Self-driving car company, Comma.ai that aims to allow consumers to implement affordable self-driving technology into their own cars.

"I don't like it when companies tell me what I can do with products that I've purchased." (Hotz, 2013)

Early Life

George Hotz was born on October 2nd, 1989. From a very early age he showed interest and ability in technology. This interest was encouraged by his father, a high-school computer teacher. He wrote his first computer program at five years old with his father on their Apple II. In his youth he received various awards for his technical ability's. When he was fourteen Hotz reached the finals of Intel's International Science and Engineering Fair with his creating of a robot that could plot the dimensions of a room. (Kushner, 2012)

Jailbreaking the iPhone (2007)

In 2007 Apple released the first iPhone. At its release Apple had designed the iPhone to only work with AT&T and was useless for users with any other carrier. At that time Hotz was 17 years old and was looking for a summer project. Hotz was a T-Mobile carrier and because of this was block from all the iPhones functionality other than making emergency calls. Over the summer Hotz was determined to Jailbreak the iPhone (To remove the restriction imposed by the manufacturer or operator) to allow users of any carrier to use the iPhone. He came up with a hardware unlock that allowed users to do this by modifying the iPhones physical hardware. It involved opening the iPhone and overriding the baseband processor. (Kushner, 2012)

Hotz shared his discovery online for free so that any iPhone owner could use this exploit. He announced this exploit in a now famous YouTube video receiving over 2 million views (Hotz, Unlocked iPhone, 2007). This hack made Hotz famous and got the attention of several news stations. CNBC conducted an interview with Hotz to discuss has hack. Apples share price rose 2% and was asked if

he believed this was due to him. *"More people want iPhones now if they can use them with any provider".* (Hotz, CNBC Interview with George Hotz, iPhone Hacker, 2007)

Jailbreaking the PlayStation 3 (2010)

Two years after the iPhone hack that made Hotz famous, he set his sight on a new target, Sony's PlayStation 3. In 2009 he was mailed a PS3 and was challenged to unlock it. Hotz aimed to hack into the PS3's hypervisor, the software responsible for determining what programs could be run on the machine. Over several weeks Hotz created a program that he ran on his PlayStation. These five hundred lines of code allowed him to bypass Sony's authentication and gain control of the hypervisor. In January 2010 Hotz announced his accomplishment on his blog along with the instructions for other owners who wished to do the same. Hotz was not yet happy, he wanted to gain full control rather than just over a specific part. He focused on the PlayStation's metdr which acted as a key that could be used to unlock the entire console. Hotz found a vulnerability to get access to this part and in turn control of the entire machine. This allowed users to run whatever software they like on their own console. (Kushner, 2012)
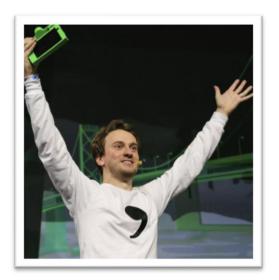
Sony responded to this hack with a lawsuit against Hotz. They claimed that Hotz's actions was breaking the Computer Fraud and Abuse Act and was facilitating copyright infringement. Sony wanted Hotz to remove the information and instructions of his hack from his blog. In response to this lawsuit, the Electronic Frontier Foundation made a statement claiming that this lawsuit was a "dangerous message" that Sony believed they could decide if modifying your machine after purchase is legal or not. They disagreed stating "Once you buy a computer, it's yours". Hotz made his own statement in response to this lawsuit. He released a rap song on YouTube criticizing Sony's actions which went viral receiving over 2.6 million views (Hotz, The Light It Up Contest -- geohot, 2011). However unfortunately for Hotz, he lost this lawsuit and Sony was granted a restraining order which prevented him from hacking anymore Sony devices and was required to take down his post of the hack. (Kushner, 2012)

Comma.ai (2015)

Hotz continued his career of hacking consumer devices for several more years until he became disinterested and sought after a new challenge. Hotz had a keen interest in AI and its numerous applications. In 2012 he enrolled in Carnegie Mellon University, to study this new field with the goal of receiving a Ph.D. (Nicholson, 2015). One of the applications that grabbed his attention was self-driving AI.

"I think that self-driving cars are still the coolest applied AI problem today." (Korosec, 2018)

In 2015 Hotz was approached by a friend to work on the vision system that was in development for the Tesla model S. However, their contract fell through. After this Hotz decided to form his own company to work on self-driving AI technology. He soon began development and in a few months he modified his Honda Acura with onboard computers and sensors. He developed a self-driving system using deep learning that would incrementally improve over time using real world driving data generated from the sensors he equipped. He had soon developed an intelligent system which was successfully able to autonomously drive on highways. (Nicholson, 2015)

Comma.ai's initial goal was to make self-driving accessible to more drivers and not just exclusively for the most expensive cars. Their aim was to sell a kit that would allow customers to easily modify their own cars to get self-driving functionality. The plan was to release this product for around $1000 to make it accessible to a larger portion of the public. Hotz had to cancel these plans after he received a letter from the National Highway and Traffic Safety Administration forbidding the sale of this product. Undeterred by this Hotz decided to instead to release the code and the 3D models for the hardware on GitHub so that anyone could access them for free. Today Comma.ai has released several products that allow users to modify their own vehicles with semi-autonomous features. Consumers with these products send their data back to Comma.ai which is then used to improve their self-driving features. As of 2018 Comma.ai has collected over 5 million miles of driving data from their users. (Korosec, 2018)

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