**James Gosling**

James Gosling was born on May 19th 1955 and raised in Calgary, Canada. He is most well known for being the person credited with inventing the computer programming language Java. Throughout this piece I will go through Gosling’s life and highlight some of his more notable work.

Gosling grew up with both his parents, his father a farmer and his mother involved in the tourism industry. He first discovered computers at the age of 13, when a friend of his father’s brought himself and his dad on a tour of the computer department at the University of Calgary. He began to spend a lot of his time at the university, and at the age of 14 after teaching himself how to program various things and getting to know some staff members he was offered a job in the physics department at the University. So throughout his high school years he was basically employed by the university as a software engineer and had an office that he shared with some post graduate students.

Gosling graduated from the University of Calgary in May 1977 with a degree in Computer Science. Six years later he got his Ph.D from Carnegie Mellon University. It was during his time at Carnegie Mellon University that he wrote a version of emacs, commonly referred to as Gosmacs or gmacs. This was the first version of Emacs to run on Unix, and was written in C with Mock Lisp as the extension language. Gmacs was programmed to solve the “string to string correction problem” that Emacs had. Gosling initially allowed Gmacs to be redistributed with no formal restriction, but later sold it to UniPress. As well as this, Gosling also built a multi-processor version of Unix for a 16-way computer system and developed several compliers and mail systems during his time at Carnegie Mellon University.

In October 1984 Gosling landed a job at Sun Microsystems, a company that sold computers, software and components. Shortly after his arrival at Sun, Gosling along with David S.H. Rosenthal, developed the windowing system NeWS (Network extensible Window System), originally named “SunDew”. NeWS was competing directly with X window system, which originated at the Massachusetts Institute of Technology in 1984. NeWS was far more powerful than X, but it was also much slower. The C API was very low level and difficult to use, so most NeWs programs tended to be entirely written in postscript. NeWS lost out to X mainly because Sun charged a fee to licence NeWS source code, while the MIT code was free. NeWS was eventually discontinued.

It was also during his time at Sun where Gosling invented the programming language java in 1994. Gosling created the original design of java and implemented the language’s original compiler and virtual machine. He traces the origins of the approach to his early graduate student days, when he created a p-code virtual machine for the labs DEC VAX computer, so that his professor could run programs written in UCSD PASCAL.

Goslings creation was a response to the question “How do you think about building systems that span a network of heterogeneous things?”. This venture for Gosling was originally just a research project but he then soon realised the impact networking was starting to have on computer systems. The timing of this creation was perfect given where the internet was heading. In 1995 Sun announced that the Netscape Navigator Internet browser would incorporate java technology.

According to New Relic (software performance improvement company) java is considered the most popular programming language in the world today. It is spread throughout the internet and powers many applications and devices that we use on a day to day basis. For his achievement, Gosling was elected as a Foreign Associate Member by the National Academy of Engineering in the United States.

Another one of Gosling’s achievements is that he cowrote “bundle program”. In the book “The Unix Programming Environment” written by Brian W. Kernighan and Rob Pike, Pike and Kernighan thoroughly examine this piece of code and describe it as “one of the prettiest shell programs we know – a few lines of code that do something simple, useful and elegant.

Gosling went on to spend many years at Sun Microsystems, and in April 2007 when Gosling was the Vice President of Sun, he received the Officer of the Order of Canada, a noble award that was given to him by the Governor General and only has 28 other recipients.

In 2010 Sun Microsystems was bought out by Oracle. After the buyout there were many changes made to the company that Gosling was not happy with at all. According to Gosling he received pay cuts, role changes, had reduced decision making ability and status, and increased ethical challenges. On April 2nd 2010, Gosling left Sun and since then has taken a very critical stance towards Oracle.

After leaving Sun Gosling announced on March 28th, 2011 on his blog that he had been hired by Google. However his time at Google was short lived because five months later Gosling then announced that he had joined a start-up called Liquid Robotics to be a chief software architecture. Gosling showed no animosity toward Google when he decided to part ways with them. He was quoted saying “I’ve surprised myself and made another career change. I had a great time at Google, met lots of interesting people, but I met some folks outside doing something completely outrageous, and after much anguish decided to leave Google”.

Liquid Robotics is a smaller start-up, that specialises in ocean-based robotics. At Liquid Robotics, Gosling’s role had him involved in both onboard software for sensing, navigation and autonomy, as well as a data centre centre dealing with the rush of data. "Liquid Robotics tackles a rocket science problem that does good for the world and is incurably cool," said Gosling in a statement released by the company. "Liquid Robotics can totally change the way we look at oceans. We'll be able to get a wide variety of detailed data more cheaply and pervasively than any other way. It involves a large data problem and a large-scale control problem, both of which are fascinating to me and have been passions of mine for years."

After spending five and a half years at Liquid Robotics it was time for Gosling to make another move, this time the Amazon. In May 2017 it was announced that Gosling would join the Amazon Web Services as a distinguished engineer. In a recent interview with Gosling he was asked what it was that brought him to Amazon; “Well, Amazon’s become a really big influence in the computing landscape. They’ve got an amazing engineering team and an amazing engineering culture. And, I interviewed at the whole pile of places and  I’ve been at little start-ups and I’ve been at big companies and the whole startup thing can be because it’s always, day by day, survival thing and then, big companies have their own issues. But yeah, Amazon is very intellectually rigorous, doing really hard problems and with really creative solutions and great people. So, I’ve only been here a month so it’s really hard to say anything other than that. But, so far so good.”.

It will be interesting to see whether Gosling remains at Amazon for a long period of time or if he will find something else that interests him. At 62 he shows no signs of slowing down based on his attitude in various interviews.

**Bibliography**

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