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*James Gosling*

# Biography of a Software Engineer: James Gosling

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## Introduction

James Arthur Gosling, also known as the father of the Java Programming Language, is a famous software engineer who has made many important contributions throughout his career. Gosling is "credited as the inventor of the Java programming language in 1991" (Computing History, 2017). Gosling has also built multiple compilers, a version of Emacs called Gosmacs, a multi-processor version of Unix and many more.



## Early Life and Education

Gosling was born in 1955 in Alberta, Canada. "In 1977, James Gosling received a BSc in Computer Science from the University of Calgary. In 1983, he earned a PhD in Computer Science from Carnegie Mellon University" (Computing History, 2017). As mentioned earlier, Gosling

wrote his own version of Emacs, called Gosmacs. He wrote it while he was working towards his doctorate thesis titled "The Algebraic Manipulation of Constraints". This wasn't the only thing he had built while he was at Carnegie Mellon University though. He also created multiple compilers, electronic mail systems for commercial customers and he even developed "one of the first multi-processor enabled UNIX operating systems" (DOJ, 1998).

## Career and Contributions

Gosling started working with Sun Microsystems in 1984. While working at Sun, Gosling worked with David S. H. Rosenthal to develop NeWS (Network extensible Window System) which was a Unix based windowed system. NeWS "is a multithreaded PostScript interpreter with extensions to draw on the screen, handle input events, with an object oriented programming facility." (Hopkins, 1987). However, due to the fact that NeWS wasn't given an open source license, it was overshadowed by X Window which is still being used today. NeWS has since been discontinued.



Gosling is most famous for “creating the original design of Java and implementing its original compiler and virtual machine” (ACMQueue, 2004) during his time with Sun Microsystems in 1994. Hence the name ‘The father of the Java programming language’. Before the creation of Java, C/C++ was seen as the most complete programming language. However, people realized that this language was platform dependant. It was only capable of programming specific devices. This “problem” was what led Gosling to create Java which was praised for its features and simplicity. “Java which was started by his major contribution and idea, scaled unbelievable heights and did expanded up to cellualars and more, Java proved to be a boon for open source programmers , the credit for all this stuff goes to none other than James Gosling.” (Deep, 2012).

Gosling spent twenty-six years at Sun Microsystems before leaving in 2010 after Oracle acquired it. In 2011 Gosling joined Google for a short period before moving onto Liquid Robotics, a startup. Gosling ended up leaving Liquid Robotics after it was acquired by Boeing and has since been working at Amazon.

### *Awards and Honours*

As you can imagine, Gosling has received many awards and honours throughout his career for his various contributions and inventions. For the creation of Java, Gosling received The Economist Innovation Award in 2002. In 2002 , Gosling also received The Flame Award USENIX Lifetime Achievement Award for “his contributions to the UNIX and advanced systems communities” (USENIX, 2002). Gosling was made an Officer of the Order of Canada in 2007 and became a fellow of the Association for Computing Machinery in 2013. He was awarded an IEEE Hohn von Neumann Medal in 2015. Gosling was also named a Computer History Museum Fellow for his creation of Java.



## Books

Gosling has written many books during his career, most of which are, unsurprisingly, related to the Java Programming Language. These include

- "The Java Programming Language" contains an in-depth look at classes, objects, interfaces, threads and multitasking, exception handling and packages.
- "The Java Language Specification" is a complete reference package for more experienced developers.
- "The Real-Time Specification for Java" contains the information needed to start building powerful Java-based software
- "The NeWS Book: An Introduction to the Network extensible Window System"

## Conclusion

James Gosling is considered to be one of the greatest software engineers for his many contributions to the world of computer science. His development of Java has allowed us to program for multiple devices, which is made even easier due to the simplicity of the language and its features. His influence in the world of computer science will not be forgotten any time soon.



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