Biography of an Influential Software Engineer – James Gosling

James A. Gosling, O.C., Ph.D. was born on 19th May 1955 near Calgary, Alberta, Canada. He is a famous software engineer, best known as the founder and lead designer behind the Java programming language.

Education and Career

In 1977 he received a Bachelor of Science in Computer Science from the University of Calgary. In 1983 he earned a Ph.D. in Computer Science under the guidance of Bob Sproull from Carnegie Mellon University and his doctoral thesis was titled "The Algebraic Manipulation of Constraints". While working towards his doctorate, he wrote a version of emacs called Gosling Emacs (Gosmacs), and before joining Sun Microsystems he built a multi-processor version of Unix for a 16-way computer system while at Carnegie Mellon University, as well as several compilers and mail systems.

Between 1984 and 2010, Gosling was with Sun Microsystems. This is when he drove the development of Java and where he rose from engineer to chief technology officer. He is best known as the father of the Java programming language. He got the idea for the Java VM while writing a program to port software from a PERQ by translating Per-Q-Code to VAX assembler and emulating the hardware.

In 2009, Oracle Corporation announced plans to buy Sun Microsystems, along with its Java franchise, for more than $7.4 billion. The deal was completed in early 2010 and Gosling left on 2nd April 2010. Regarding why he left, Gosling cited reductions in pay, status, decision-making ability, change of role, and ethical challenges. He has since taken a very critical stance towards Oracle in interviews, noting that "During the integration meetings between Sun and Oracle, where we were grilled about the patent situation between Sun and Google, we could see the Oracle lawyer's eyes sparkle". Later, during the Oracle v Google trial over Android, he clarified his position saying "While I have differences with Oracle, in this case, they are on the right. Google totally slimed Sun. We were all really disturbed, even Johnathan Schwartz; he just decided to put on a happy face and tried to turn lemons into lemonade, which annoyed a lot of folks on Sun". However, he approved of the court's ruling that APIs should not be copyrightable.

On 28th March 2011, James Gosling announced on his blog that he had been hired by Google where he spent six months, according to his LinkedIn profile. At Goggle, he joined his former Sun colleague Eric Schmidt, who is now executive chairman of Google parent company Alphabet and who also played a big role in Java's early development. He then announced that he joined a start-up called Liquid Robotics, a company that was acquired by aerospace giant Boeing. Earlier this year, on 22nd May 2017, he announced on Facebook that he would be joining Amazon Web Services.

In between he has also served roles of Chief Technology Officer at Sun's Developer Products Group and CTO of Sun's Client Software Group. He also worked for some period for Oracle after the acquisition.

Contributions

Gosling initially became known as the author of Gosling Emacs, and also invented the windowing system NeWs, which lost out to X Window because Sun did not give it an open source license. He is generally credited with having invented the Java programming language in 1994. He created the original design of Java and implemented the language's original compiler and virtual machine. Gosling traces the origins of the approach to his early graduate-student day, when he created a p-code virtual machine for the lab's DEC VAX computer, so that his professor could run programs written in UCSB Pascal. In the work leading to Java at Sun, he saw that architecture-neutral execution for widely distributed programs could be achieved by implementing a similar philosophy: always program for the same virtual machine.

James was honoured with "Officer of the Order of Canada" Title in 2007 which is the second highest title that can be given to any civilian in Canada. For his achievement the National Academy of Engineering in the United States elected him as a Foreign Associate member. Another contribution of Gosling's was co-writing the "bundle" program, a utility thoroughly detailed in Brian Kernighan and Rob Pike's book "The Unix Programming Environment".

Because much of Java's importance in the business world, Gosling has credibility among corporate IT executives who tend to be conservative about what technology they run and where. Many of those executives are now weighing whether to move their software from their own data centres to a public cloud like AWS, Microsoft Azure, or Google Cloud Platform.

Impact

The development of the Java programming language has had an immeasurable impact on computer science. Gosling combined the best ideas in programming languages with his own ideas to create the first widely deployed programming language featuring portability to allow transmission to code over the internet from one computer to another for execution while still meeting security requirements. Its features include the portable "write once, run anywhere" byte-coded platform and libraries that makes use of a standard class file format that can be loaded and executed by any Java Virtual Machine; the robust and secure "sand box" approach; type-safe automatic storage management; just-in-time compilation; and platform scaling from cell phone to enterprise server. Used by approximately 9 million developers, Java is one of the most popular languages in history and can be found in servers, mobile phones, and the chips embedded in credit cards and identity badges. Gosling has also influenced software engineering methodology with important contributions. He has also impacted the world of embedded systems with his early work on the ISIS II satellite, a real-time specification for Java, and his current work on autonomous ocean-going robots.

Facts

Gosling is listed as an adviser at the Scala company Typesafe Inc., Independent Director at Jelastic and Strategic Advisor for Eucalyptus.

He is known for his love of proving "the unknown" and has noted that his favourite irrational number is $\sqrt{2}$. He has a framed picture of the first 1,000 digits of $\sqrt{2}$ in his office.

References

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