James Gosling

James Arthur Gosling, often referred to as "Dr. Java", <u>OC</u> (born May 19, 1955) is a Canadian <u>computer scientist</u>, best known as the founder and lead designer behind the <u>Java programming</u> language. [3]

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Early life

James Gosling received a <u>Bachelor of Science</u> from the <u>University of Calgary</u> ^[4] and his M.A. and Ph.D. from <u>Carnegie Mellon University</u>, all in <u>computer science</u>. ^{[2][5][6]} He wrote a version of <u>Emacs</u> called <u>Gosling Emacs</u> (Gosmacs) while working toward his doctorate. He built a multi-processor version of Unix for a 16-way computer system ^[7] while at Carnegie Mellon University, before joining <u>Sun Microsystems</u>. He also developed several <u>compilers</u> and mail systems there.

Career & contributions

Gosling was with Sun Microsystems between 1984 and 2010 (26 years). At Sun he invented an early Unix windowing system called $\underline{\text{NeWS}}$, which became a lesser-used alternative to the still used $\underline{\text{X Window}}$, because Sun did not give it an open source license.

He is known as the father of the <u>Java programming language</u>. [8][9] He got the idea for the <u>Java VM</u> while writing a program to port software from a <u>PERQ</u> by translating Perq Q-Code to VAX assembler and emulating the hardware. He is generally credited with having invented the <u>Java</u> programming language in 1994. [10][11][12] He created the original design of Java and implemented the language's original compiler and <u>virtual machine</u>. [13] Gosling traces the origins of the approach to his early graduate student days, when he created a p-code virtual machine

James Gosling

OC



Born James Gosling May 19, 1955

Calgary, Alberta, Canada

Nationality Canadian

Alma mater University of Calgary

(BSc, 1977)

Carnegie Mellon

University (MA; PhD, 1983)

Known for Java (programming

language)

Title Dr. Java

Children 2

Awards Officer of the Order of

Canada

IEEE John von Neumann Medal The Economist Innovation

Award

NAE Foreign Member

Scientific career

Institutions Sun Microsystems

Oracle Corporation

Google

Liquid Robotics^[1]

for the lab's <u>DEC VAX</u> computer, so that his professor could run programs written in <u>UCSD Pascal</u>. 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. [14] Another contribution of Gosling's was co-writing the "<u>bundle</u>" program, known as "shar", a utility thoroughly detailed in <u>Brian Kernighan</u> and <u>Rob Pike</u>'s book <u>The Unix Programming Environment</u>.

	Amazon Web Services
Thesis	Algebraic Constraints (htt p://reports-archive.adm.c s.cmu.edu/anon/scan/C MU-CS-83-132.pdf) (1983)
Doctoral advisor	Bob Sproull and Raj Reddy ^[2]

He left Sun Microsystems on April 2, 2010, after it was acquired

by the <u>Oracle Corporation</u>, [8] citing reductions in pay, status, and decision-making ability, along with change of role and ethical challenges. [16] 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 being grilled about the patent situation between Sun and Google, we could see the Oracle lawyer's eyes sparkle."[9] He clarified his position during the <u>Oracle v. Google</u> trial over Android: "While I have differences with Oracle, in this case they are in the right. Google totally slimed Sun. We were all really disturbed, even <u>Jonathan</u> [Schwartz]: he just decided to put on a happy face and tried to turn lemons into lemonade, which annoyed a lot of folks at Sun."[17] However, he approved of the court's ruling that APIs should not be copyrightable.

In March 2011, Gosling joined <u>Google</u>. Six months later, he followed his colleague <u>Bill Vass</u> and joined a startup called <u>Liquid Robotics</u>. In late 2016, Liquid Robotics was acquired by <u>Boeing</u>. Following the acquisition, Gosling left Liquid Robotics to work at <u>Amazon Web Services</u> as Distinguished Engineer in May 2017.

He is an advisor at the <u>Scala</u> company <u>Lightbend</u>, <u>[22]</u> Independent Director at <u>Jelastic</u>, <u>[23]</u> and Strategic Advisor for Eucalyptus, <u>[24]</u> and is a board member of DIRTT Environmental Solutions. <u>[25]</u>

He is known for his love of proving "the unknown" and has noted but later clarified to be untrue that his favorite <u>irrational number</u> is $\sqrt{2}$. He has a framed picture of the first 1,000 digits of $\sqrt{2}$ in his office. [26]

Awards

For his achievement, the <u>National Academy of Engineering</u> in the <u>United States</u> elected him as a Foreign Associate member. [27]

- 2002: awarded *The Economist* Innovation Award. [28]
- 2002: awarded <u>The Flame Award</u> USENIX Lifetime Achievement Award. [29]
- 2007: made an Officer of the <u>Order of Canada</u>. The Order is Canada's second highest civilian honor. Officers are the second highest grade within the Order.
- 2013: became a fellow of the Association for Computing Machinery. [31]
- 2015: awarded IEEE John von Neumann Medal [32]
- 2019: named a <u>Computer History Museum Fellow</u> for the conception, design, and implementation of the <u>Java</u> programming language. [33]

Books

■ <u>Ken Arnold</u>, James Gosling, David Holmes, *The Java Programming Language, Fourth Edition*, Addison-Wesley Professional, 2005, ISBN 0-321-34980-6

- James Gosling, Bill Joy, Guy L. Steele Jr., Gilad Bracha, The Java Language Specification, Third Edition, Addison-Wesley Professional, 2005, ISBN 0-321-24678-0
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See also

- History of Java
- Fallacies of distributed computing
- James Gosling's personal weblog (http://nighthacks.com/jag/blog/)
- Presentation (http://www.infoq.com/presentations/gosling-jvm-lang-summit-keynote) by James Gosling about the origins of Java, from the JVM Languages Summit 2008
- Slide show depicting Gosling's life (http://www.eweek.com/c/a/Application-Development/The-Li fe-and-Times-of-Java-and-James-Gosling-746438/)
- The Process of Innovation (http://www.stanford.edu/class/ee380/Abstracts/110309.html) James Gosling's talk at <u>Stanford University</u> (video archive (http://ee380.stanford.edu/cgi-bin/videologger.php?target=110309-ee380-300.asx))
- James Gosling interview (https://twit.tv/shows/triangulation/episodes/245) on Triangulation (TWiT.tv). Recorded 2016-04-11

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