

*Engineering Problem Solving and Programming*  
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*History of MATLAB and the Company MathWorks*

K. Ming Leung

mleung@duke.poly.edu

<http://cis.poly.edu/~mleung>

Department of Computer Science and Engineering  
Polytechnic Institute of NYU

Material presented here was taken with slight modifications from The Origin of MATLAB and The Growth of MATLAB and The Math at the MathWorks website.

In the late 1970s, Cleve Moler, then a professor at the University of New Mexico, used a computer language called Fortran to develop the first version of MATLAB. His goal was to provide to students the ability to utilize powerful numerical packages for scientific and engineering computations without having to write FORTRAN code.

He visited Stanford University to spend his sabbatical in 1979 and taught the graduate numerical analysis course where the students used MATLAB for some of their homeworks. Half of the students in the class were from mathematics and computer science, and the other half were from engineering. Although the students in mathematics and computer science didn't particularly like MATLAB, the engineering students were impressed. The emphasis on matrices (arrays) in MATLAB proved to be very useful to them.

A few of the Stanford engineering students from his class later joined two consulting companies in Palo Alto, California. These companies extended MATLAB to have more capability in control analysis and signal processing.

Jack Little, a Stanford- and MIT-trained control engineer, was the principal developer of one of the first commercial products based on Fortran MATLAB. When IBM announced their

first PC in August, 1981, Jack Little quickly anticipated the possibility of using MATLAB and the PC for technical computing. He and colleague Steve Bangert reprogrammed MATLAB using the language C and added M-files, toolboxes, and more powerful graphics.

Cleve Moler, Jack Little and Steve Bangert founded The MathWorks in California in 1984. The first mailing address was a rented A-frame cabin where Jack Little lived in the hills above Stanford University. The MathWorks released MATLAB 1.0, implemented in C for MS-DOS PCs. The founders of The MathWorks recognized the need among engineers and scientists for more powerful and productive computation environments. The IBM PC introduced in 1981, were slow and had little memory, Jack Little anticipated that they would eventually be capable of effective technical computing.

In 1984, The MathWorks had only  $2^0$  employees, including Jack Little. In 1985, Steve Bangert officially joined the staff, giving the company  $2^1$  employees. The company continued to roughly double in size every year for its first seven years. By 1991, there were  $2^7 (= 128)$  employees. It is still growing but at a slightly more moderate rate for the past 15 years.

The MathWorks sold its first order, 10 copies of MATLAB, to MIT in February 1985.

Shortly after founding the company, MathWorks relocated to Jack Little's home state, Massachusetts. Cleve Moler re-

mained an advisor to MathWorks for its first five years, before becoming a full-time employee in 1989.

For the first couple of years, Jack Little, Steve Bangert, and a few of the other early employees worked out of their homes in California and Massachusetts. By 1987 MathWorks had its first nonresidential office. It was a small place that MathWorks outgrew in less than two years.

When the company reached about a dozen employees, they moved several miles east to take over the second floor of a lovely building in South Natick, Massachusetts. In 1991, MathWorks moved several miles north to Prime Park Way in Natick, Massachusetts. Eight years later, the company had grown to occupy most of the building, and it was time to move again.

MATLAB 4 came out with 2- and 3-D color graphics and sparse matrices. The MATLAB Student Edition was released. One of the first 75 registered commercial Web sites, mathworks.com went live.

The company has been profitable every year since its inception and is privately held. It now employs more than 2,200 people in more than a dozen offices around the world. Over 1,000,000 engineers and scientists in more than 100 countries, on all seven continents, use MATLAB and Simulink, which was built on top of MATLAB. These products have become fundamental tools for work at the world's most innovative technology companies, government research labs, financial insti-

tutions, and at more than 3,500 universities.