



Name in English: An Wang

Name in Chinese: 王安

Name in Pinyin: Wáng Ān

Gender: M

DoB: 1920-1990

PoB: Shanghai, China

Electronics and Computer Pioneer

Profession (s): Physicist, Electronics Inventor, Entrepreneur

Education: Chiao Tung University, Shanghai, Electrical Engineering, 1940; Harvard University, M.S. Communications Engineering, 1946; Harvard University, Ph.D, Engineering & Applied Physics, 1948

Awards: The Medal of Liberty, 1986 awarded on the occasion of the relighting of the Statue of Liberty torch to a dozen 1st generation Americans who had made a major contribution to America.

Contribution (s): An Wang was one of the pioneers of the computer industry and of the digital revolution. Born in Shanghai, he became fascinated by electronics at an early age. Like many kids of his generation he built his own radio but went much further by pursuing an electrical engineering degree as an adult. During World War II he spent his time designing radio transmitters and receivers for the Chinese war effort.

In 1945, he received money from the Chinese government to continue his electronics education at Harvard University. He quickly earned his master's in just one year and had two doctorates by 1948. In the same year, he was hired by Howard Aiken, whose team at Harvard Computation Laboratory had developed the ASSC Mark 1, one of the first digital computers during the war. Aiken wanted Wang to find a way to store and retrieve data using magnetic memory. Wang developed the idea of memory cores, donut shaped rings of magnetically charged material that could be read to represent the 0 and 1 of binary code. He published a paper and patented the concept of memory cores in 1950 along with fellow Shanghai native, W.D. Woo. This idea excited the interest of MIT and other universities, leading them to develop memory cores that greatly increased the speed of computers and became standard for mainframe computer memory systems for the next 20 years.

The protracted legal fight with IBM and other manufacturers over his patent that he eventually won turned Wang away from allowing others to develop and sell any of his inventions in the future. In 1951, he left Harvard and opened up his own company, Wang Laboratories, using his life savings. They slowly grew successful building electronic instruments and in 1955, Wang became an American citizen.

Wang's major invention of the mid-1960s was developing a digital method of quickly and reliably calculating basic arithmetic for a low cost. Wang electronic calculators quickly replaced the huge mechanical machines that had been used by big businesses, scientific institutions, and the government up until that time. By 1969, the integrated circuit had allowed Wang to start selling true handheld calculators to the public at a relatively low price (each one sold for thousands of dollars in those days but that was better than the millions his now distant competitors charged for their machines.)

Wang personally led the effort to develop the first word processing machine. In 1976, the Wang 1200 WPS, introduced millions of American workers to computers for the first time. Until that time electronics in the office had been almost solely in the domain of specialized computer technicians. Now ordinary people across an entire company could be connected together through the documents they produced and stored electronically. Word processing had an immense impact on office productivity around the world. Time and money that had previously been spent on laborious and slow document preparation on typewriters could now be done quickly and cheaply and then transmitted around the world electronically in an instant resulting in untold trillions of dollars in savings. Subsequent innovations such as desktop publishing that revolutionized print media across the world stems from this invention. By the 1980s word processors were being eliminated as separate machines and had become an integral part of every computer in the world. At its height in the mid-1980s, Wang Labs was a \$5 billion Fortune 500 company with 30,000 employees.

Publications/Patents: An Wang held 15 patents on computer and electronic instruments

External Links:

http://www.thocp.net/biographies/wang_an.html

http://www.inventors.about.com/od/wstartinventors/a/an_wang.htm

<http://www.answers.com/topic/an-wang>