Women in computer science

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Hedy Lamarr

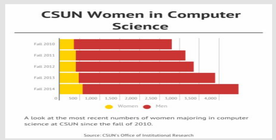
We are in 1940, evening is falling on Hollywood. By the light of a desk lamp, a young woman frantically fills the pages of a notebook. Jet black hair, porcelain complexion and azure eyes, her name is Hedy Lamarr.
Having become a Hollywood star upon her arrival in the United States in 1937, Hedwige Kiesler, her real name, is Austrian. Of Jewish origin, she fled her country which fell into the hands of the Nazis.
The young woman was quickly adopted by the American public who admired her for her glamour. Hedy thanks this popular affection with boundless patriotism. As the United States prepares to enter the war, she decides to put her secret talents to work for the army. Because the actress has a hobby: inventing. Passionate about science and technology since childhood, Hedy spends hours tinkering with unusual gadgets: mustard dispenser, fluorescent canine collar or effervescent Cola pellets have already been born from her fertile imagination.
With the complicity of her friend George Antheil, a famous composer, she created a system intended to protect communications between ships and their torpedoes. Radio-guided, the latter were often intercepted by the enemy during submarine attacks. Inspired by the perforated strips of paper that were fitted to mechanical pianos, Hedy and Georges thus developed the first frequency-hopping spread spectrum system. This technique distributes the transmission of signals according to several channels in a random manner and thus guarantees their undetectability.
In 1941, the two accomplices entrust their patent to the Navy, which laughs in their face. A musician and a film star, genius inventors? The good joke. Many years later, Hedy learned that the patent had finally been used as early as the Cuban crisis in 1962. Today, his invention is everywhere: from bluetooth to GPS, via the Wifi network, all communication devices use the secret coding of transmissions.

If today Hedy Lamar's work is linked to our modern lives, his avant-garde ideas did not get the recognition they deserved at the time. It was only in 1997 that she was awarded the Electronic Frontier Foundation prize. She was then 82 years old and lived in Florida, far from the glory she once knew.
During the last decades of her life, Hedy Lamarr only communicated by telephone with the outside world, even with her children and her close friends, living reclusively in her Florida apartment5. She often talks up to six or seven hours a day on the phone, but hardly ever spends time with anyone in person.

She died three years later. She and her sidekick George Antheil were posthumously inducted into the National Inventors Hall of Fame in 2014

Women were among the first programmers in the 20th century and contributed substantially into the industry. After the 1960's the soft work that had been dominated by women evolved into the modern software and the importance of women decreased .

Besides of that the recorded history of the field has downplayed a-lot of women achievements .



Gender gap :

The gender disparity has been examined and only few firm explanations have been established .

- After the world war 2 companies wanted to hire ideal programmers so they worked with psychologists on a aptitude test and the ones who were most successful in it were the **introverts and men** .

- In 1992 john grays book **men are from mars and women from venus** he theorised that men and women tend to differ in their ways of thinking which leads them to approach technology and computing in different ways . A significant issue is that women don't find themselves in an unpleasant environment so they decline to those carrier's. A further issue is that if a class of computer scientists contains few women those few can be singled out leading to isolation and feelings of non belonging and that leads them to leave the area .

- **Kathleen Lehman** A psychologist at university of California said that the problem is that typically women aim for perfection and feel disillusioned when code does not compile whereas men may simply treat it as learning experience.

Margaret Hamilton

Margaret Hamilthon was born on August 17, 1936 in Paoli, United States of America.After graduating in high school in 1954 , she continued her studies in Mathematics at the University of Michigan but when she got her license, she moves to Massachusetts and she wanted to continue her studies in Mathematics but will finally choose to study Computer Science in MIT (Massachusetts Institute of Technologie). At this University she worked to many project like : to develop computer programs of weather forecasting for the professor Edward Lorentz.ORto work to the military project SAGE (Semi Automatic Ground Environnement) which is an American secret weapon in the laboratory Lincoln at MIT which consist to develop programs to detect the fighter jets in the air. AND SHE JOINED THE DRAKER LABORATORY AFTER THIS PROJECT TO WORK IN A NASA 'S PROJECT NAMED APOLLOShe became head of the team in charge of developing the embedded software used by the Apollo and then Skylab3(DEFINITION : Skylab is the first space station launched by the American space agency, NASA) missions. She thus acquired a solid experience in software design at a time when IT project management and design methods were in their infancy. She has also acquired a lot of experience in certain domains areas of computer science like process modeling , design of prevention systems, development paradigm, domain analysis, quality assurances or modeling computer language. And when she finished with the NASA's projects she is the sea of the company Higher Order Software (HOS) and with the detection error skills that she acquired by working with NASA on their projects, she develop in this company many technics that many governments will use later.And finally, she created and managed her own company named Hamilton Technologies to develop a programing language. Despite the fact that it was said that she has a child and that she could not manage a company and that most of companies were managed by men she succeeded in reversing the trend and also to proving that women can also do the same

Frances Allen

Frances allen born on August 4, 1932 in Peru (New York State), is an American computer scientist In field of optimizing compilers.

In 1954 Frances Allen graduated from the University of Albany with a bachelor of science in Mathematics, she earned a Masters in Mathematics from the University of Michigan in 1957 and began teaching at the Peru School in New York state.

In 1980, she founded the parallel translation group to study problems related to compiling using computer code , rather than binary instructions for parallel architectures. She describes algorithms and implements technologies which are the basis of program optimization and which are used in modern compilers as well as in smartphones in our days.

She works for the NSA on supercomputers to analyze their eavesdropping . His influence on IBM was recognized by earning the title of IBM Fellow in 1989; she is then the first woman to receive this title. She was also president of the IBM Academy of Technology, which plays an important role within IBM in order to target technical problems and bring together the different branches of technicians.

This Woman, who has spent her entire career at IBM (45 years), She was celebrated by her peers in 2006 with the receipt of the Turing Award. She was also the first woman to receive such an honor.

Conclusion

Women does a lot for the field of science and computer science, even if they was a lot of obstacles and the discrimination that they are sufferef to, they have succeeded in inventing things and contributing to science like Rosalind Franklin with DNA, Margaret Hamilton with The NASA and finilly Frances Allen with compilers.