Famous females in computing

Ada Lovelace

Ada was an English Mathematician born in 1815, daughter to the famous poet Lord Byron. She is known as 'the first computer programmer' for writing an algorithm for a computing machine in the mid 1800s and kickstarted the tradition of women making incredible leaps forward in computing and technology.

As a child she was taught science and mathematics, not the usual subjects for girls at this time. At the age of 17, she met Charles Babbage, a mathematician and inventor, and he became her mentor. Ada was fascinated by his ideas and in time was asked to translate an article on Babbage's analytical engine which had been written in Italian. Not only did she translate it, but she added in her own ideas about the machine and so the final text was 3 times longer than the first! She noted how codes could be used for the machine to handle letters and symbols as well as numbers. Ada also had an idea for the machine to repeat a series of instructions, which computers use today and is known as looping.

Ada's contributions to computing science were not discovered until the 1950s. Since her death in 1852, she has been given many awards. The Department of Defence even named a newly developed computer language after her – 'Ada'.

Hedy Lamarr

Hedy Lamarr was born as Hedwig Eva Maria Kiesler in 1914 in Vienna. She was the daughter of a bank director and a concert pianist. As a child she studied ballet and piano. Although she was known as an actress, she was also an inventor and a pioneer in the field of communications technology.

Her first invention was a tablet which dissolved in water to make a carbonated beverage (fizzy drink).

Lamarr emigrated to California in America during World War II. She and her neighbour George Antheil looked at ways of adapting his way of controlling musical instruments for use in avoiding the jamming of radio-controlled torpedoes and missiles. This was called frequency-hopping. It changed the frequency of a signal from a submarine control centre and the outgoing torpedo up to 88 times in order to prevent jamming. (Antheil chose the number 88 because of his love for music - the piano has 88 keys!)

Unfortunately the Navy wasn't much of a fan of their invention and didn't use it straight away. It was first used in the Cuban Missile Crisis in 1962.

Their invention now forms the basis of lots of modern wireless communications technology, such as Wi-fi communications, Bluetooth and GPS.

Katherine Johnson

Katherine Johnson, born in 1918, was an African American physicist and mathematician. She was known for her work on the United States aeronautics and space program.

Johnson was one of the first black people to go to West Virginia University and she took every maths class available to her. One of her tutors even designed a special course for her based on the geometry of space.

She applied for a job at NASA but was turned down the first time. The following year, she applied again and was accepted. During her time at NASA, Johnson played an important part in getting astronauts to orbit the earth. During the 1960's, electronic calculators still weren't a totally reliable method for handling sophisticated equations so Astronaut John Glenn insisted Johnson redo all the calculations by hand! He would only take off if Johnson agreed the calculations were correct. She also worked with NASA's team of engineers to send the first men to the moon by pinpointing the time and location of departure that would put them on track for their destination.

Johnson co-authored one of the first textbooks on space travel and later on in her career, worked on some of NASA's early plans for their missions to Mars.

In 2015 President Barack Obama awarded her the Presidential Medal of Freedom for her pioneering works in the field of STEM (science, technology, engineering and mathematics) - the highest honour a civilian can receive.