Alan Turing

Alan Mathison Turing was an English mathematician, computer scientist and cryptanalyst. Born on 23 June 1912, Turing was the son of a British member of the Indian Civil Service. He started studying mathematics at the University of Cambridge in 1931. After graduating, he started working there as a research fellow.

In 1936, he published his most famous paper, "On Computable Numbers, with an Application to the Entscheidungsproblem", which introduced the concept of a Turing machine.

A Turing machine is a theoretical machine that manipulates symbols on a tape strip, based on a table of rules. Despite its simplicity, it is capable of implementing any algorithm.

Turing spent the 1936-1938 academic year at Princeton University, where he studied cryptology and built an electro-mechanical binary multiplier. He received his PhD from Princeton in 1938, and returned to the United Kingdom.

He worked part-time with the Government Code and Cypher School, a British codebreaking organization. He moved to the organization’s wartime headquarters at Bletchley Park, Buckinghamshire. In 1939 and 1940, Turing and others designed a code-breaking machine used to decipher large quantities of German encrypted communications. He eventually devised the first systematic method for breaking messages encrypted by the Enigma machine. He was made an Officer of the Most Excellent Order of the British Empire for his work.

In 1945, Alan Turing joined the National Physical Laboratory (NPL) to design the ACE (Automatic Computing Engine), one of the earliest stored-program computers. Turing's design was more detailed than the competing design by John von Neumann, but it was delayed due to legal reasons.

In 1948, Turing joined the Victoria University of Manchester as a reader in mathematics. He became deputy director of the Computing Machine Laboratory, where he worked on software for the Manchester Mark 1 computer.

In 1952, Turing was convicted of gross indecency for having a relationship with a 19-year-old man. He was given the choice between imprisonment and chemical castration. He chose the latter. This had a devastating impact on Turing's health and mental state. He became depressed and isolated. In 1954, Turing was found dead of cyanide poisoning. His death was ruled a suicide.