

Alan Turing: Virtuoso Visionary

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Alan Turing (1912–1954) has been increasingly recognised as an important mathematician and philosopher who despite his short life developed ideas that today have led to foundational aspects of computer science and related fields. Some of Turing’s mathematics can be visualised in interesting and even artistic ways, aided using software. Early in his career he developed the foundational concept of what later became known as the Universal Turing Machine, a theoretical version of what is now implemented as a digital computer. Even Turing’s abstract concept of such a machine can generate interesting patterns. Towards the end of his life, Turing also worked on morphogenesis, literally “creation of shape” from the Greek-derived words morph and genesis. This is the biological process in which a living organism develops its shape and has become influential in bioinformatics. A significant corpus of the historical material related to Turing can now be accessed online through a number of major archives with digitised documents. More recently, Alan Turing had inspired creativity in the arts with output in media as diverse as books, film, music, painting, plays, and sculpture. This talk provides an overview of these diverse aspects related to Turing’s remarkable achievements. Although the story of Turing can be seen as one of tragedy, with his life cut short while still at the height of his intellectual powers, from a historical viewpoint Turing’s contribution to humankind has been triumphant.