

From ARM1 to M1

Steve Furber CBE FREng FRS

The first ARM microprocessor - retrospectively called ARM1 - was developed at Acorn Computers Ltd during the early 1980s. Its descendants now number around 200 billion, providing the computing power for most of the world's mobile phones and much else, including the world's most powerful supercomputer, the Japanese Fugaku machine. The recent move to M1 'Apple Silicon' in the Apple Mac range has brought the ARM back to its origins on the desktop. A comparison of the ARM1 and the M1 reveals the scale of the advances in computer technology over 4 decades.

The Inmos transputer

David May FREng FRS

A talk about the formation of the microelectronics company Inmos and the development of the Inmos transputer, which was the first microcomputer designed for concurrent computing.

The Manchester Baby: analogue / digital boundaries

Chris Burton

Although some early computers are described as Digital, it is noted that they do contain significant Analogue electronics, attributed to the background of their designers and to the available technology.

System 360 and the ATM: the tip of the iceberg

Sir Anthony Cleaver FBCS HonFREng

Of the hundreds of developments at IBM UK's Hursley Lab since its foundation in 1958, three in the 60's and 70's had worldwide impact in their very different ways – the first System/360, the ATM and rotary actuator technology, with one man, John Fairclough, involved in all three.

Discussion: hardware themes

Chris Burton, Sir Anthony Cleaver FBCS HonFREng, Steve Furber CBE FREng FRS, David May FREng FRS (chair: Andrew Herbert OBE FREng)

The early years of AI in Edinburgh

Alan Bundy CBE FREng FRS

From 1963 onwards, Edinburgh attracted a diverse group of researchers with an interest in Artificial Intelligence. Initially, this was one of only four AI labs worldwide and the only one outside the USA. It made pioneering advances in machine intelligence, cognitive science, robotics, automated reasoning, declarative programming and formal verification.

Transputers, Occam and distributed memory computing

Tony Hey CBE FREng FACM

With the development of the T800 transputer with its floating point co-processor it became feasible to build powerful computing platforms from arrays of transputers such as the EU SuperNode machine. The Occam programming language, based on Tony Hoare's CSP, educated scientists in the fundamentals of concurrent message passing programs and ultimately led to the MPI message passing standard which is still the basis for programming the world's fastest supercomputers.

LEO and the users

Georgina Ferry

The LEO pioneers took pride in the fact that their systems were 'user-driven'. The customer was satisfied, but was the business model flawed?

Pioneers in computer history: Wilkes, Wheeler and Needham

David Hartley

The world of computer pioneers (in the modern era) has steadily grown since World War II. I have chosen three professors from the Maths Lab at Cambridge who pioneered their design and use in a time when the underlying technology never learned to stop changing.

Memoir of a recovering Utopian

John Naughton

IBM Software in the UK: the innovation and the people

Chris Sharp

Since 1956 IBM has had a software development operation in the UK. This has been a significant source of innovation to both IBM and the world, with the engineers working quietly behind the scenes. This talk will briefly look through the decades at some of those innovations and the people behind them, to reveal a 'family tree' of engineering excellence that continues to this day.

Preservation of software as historical artefacts

David Holdsworth

Despite its intangibility, software can be preserved indefinitely, and in a form that allows its execution and study, by exploiting the fact that digital copies are perfect.

Reflecting on the history of software

Martin Campbell-Kelly, Troy Astarte and David Dunning (chair: Ian Nussey OBE FREng)

The panellists will reflect on the papers given in the session and add perspectives from their own areas of knowledge in the history of computing, computer science, and logic.