Kathleen Booth

Kathleen Hylda Valerie Booth (née **Britten**, born 9 July 1922) wrote the first assembly language and designed the assembler and autocode for the first computer systems at Birkbeck College, University of London.[1] She helped design three different machines including the ARC (Automatic Relay Calculator), SEC (Simple Electronic Computer), and APE(X)C.

Kathleen Booth	
Born	9 July 1922 Stourbridge, Worcestershire, England
Alma mater	University of London
Known for	Invented the first assembly language for her University's computer
Spouse(s)	Andrew Booth
Scientific career	
Fields	Computer science
Institutions	Birkbeck College

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Personal life

Kathleen Britten was born in Stourbridge, Worcestershire, England,[2] on 9 July 1922.[3][4] She obtained a BSc in mathematics from the University of London in 1944 and went on to get a PhD in Applied Mathematics in 1950. She married her colleague Andrew Donald Booth in 1950 and had two children.[5]

Career

Kathleen Booth worked at Birkbeck College, 1946–62.[6] She travelled to the United States as Andrew Booth's research assistant in 1947, visiting with John von Neumann at Princeton.[7] Upon returning to the UK, she co-authored "General Considerations in the Design of an All Purpose Electronic Digital Computer," describing modifications to the original ARC redesign to the ARC2 using a von Neumann architecture.[6] Part of her contribution was the ARC assembly language.[8] She also built and maintained ARC components.[9]

Kathleen and Andrew Booth's team at Birkbeck were considered the smallest of the early British computer groups. From 1947 to 1953, they produced three machines: ARC (Automatic Relay Computer), SEC (Simple Electronic Computer), and APE(X)C (All-purpose Electronic (Rayon) Computer).[10] She and Mr. Booth worked on the same team. He built the computers and she programmed them.[6] This was considered a remarkable achievement due to the size of the group and the limited funds at its disposal. Although APE(X)C eventually led to the HEC series manufactured by the British Tabulating Machine Company, the small scale of the Birkbeck group did not place it in the front rank of British computer activity.[11]

Booth regularly published papers concerning her work on the ARC and APE(X)C systems and co-wrote "Automatic Digital Calculators" (1953) which illustrated the 'Planning and Coding' programming style.[12] She co-founded the School of Computer Science and Information Systems in 1957 at Birkbeck College

along with Andrew Booth and J.C. Jennings.[6] In 1958, she taught a programming course.[6]

In 1958, Booth wrote one of the first books describing how to program APE(X)C computers.[13]

From 1944 to 1946, she was a Junior Scientific Officer at the Royal Aircraft Establishment in Farnborough.[5] From 1946 to 1962, Booth was a Research Scientist at British Rubber Producer's Research Association and for ten years from 1952 to 1962 she was Research Fellow and Lecturer at Birkbeck College, University of London and later became a Research Fellow, Lecturer and Associate Professor at the University of Saskatchewan, Canada from 1962 to 1972.[5] At Lakehead University in Canada she became the Professor of Mathematics from 1972 to 1978.

Booth's research on neural networks led to successful programs simulating ways in which animals recognize patterns and characters.[6] She and her husband resigned suddenly from Birkbeck College in 1961 after a chair was not conferred on her husband despite his massive contributions; an ICT 1400 computer was donated to the Department of Numerical Automation but was in fact installed in the London School of Hygiene and Tropical Medicine.[6]

In 1962, after leaving Birkbeck College the Booth family moved to Canada to work at the University of Saskatchewan and then at Lakehead University in 1972. Kathleen Booth retired from Lakehead in 1978. Her last current paper was published in 1993 at the age of 71. Titled "Using neural nets to identify marine mammals" it was co-authored by her and her son, Dr. Ian J. M. Booth.[14]

In May 2019, Booth was reported to be living in retirement, at the age of 97.[15]

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