TECHNOLOGY · EXPOSITORY ESSAY · 612 WORDS · UNDERGRADUATE

Computer Science Pioneers and Their Contributions

From Al-Khwarizmi's algorithms to the World Wide Web

Student's Name

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Computer science is the study of theory, research and the engineering that customs the foundation for the design and usage of computers. The main pioneers of computer science comprise of the following; Al-Khwarizmi, Howard Aiken, John Atanasoff, Ada Lovelace, Charles Babbage, John Backus, Berners-Lee, Coraddo Bohn, George Boole, Kathleen Booth, Per Brinch Hansen, Fred Brooks, Grace Hopper, Edsger Dijkstra, Douglas Engelbart, Vannevar Bush and many others.

In the year 0830, the Al-Khwarizmi developed or derived the arithmetic algorithm which played a role in the performance of the arithmetic by the use of the arithmetic numerals. Coming the year 1944, Howard Haiken conceived and codesigned the Havard Mark I. It was the Automatic Sequence Controlled Calculator which was used in the better part of the second world war. It is this innovation which aided in the computation and printing of the mathematical tables which played a role in the development of the analytical engine by Charles Babbage in 1822 and 1837 respectively. It is the work of Ada Lovelace who made a recognition that the general purpose computers proposed by Babbage can do some other functions beyond pure mathematical calculations and created the first algorithm which was used in such machines. It was Ada who played a vital role in recognition of the computing machine potentials hence became the first computer programmer.

Coming the year 1954 and 1963, John Backus played a role in the translation of formulas known as FORTRAN. It was one of the first practical high levels programming languages and formulates the Backus-Naur form which aided in the description of the formal language syntax. It was used in the scientific computing and numeric computation. These thus played a very vital role in the development and growth of the computer science field. To continue advancing the field, in 1989 to 1990, Tim Berners-Lee and Robert Cailliau invented the worldwide web which is the information space where the documents and other website resources are identified by the Uniform Resource Locators. This information is accessed by the users through the use of the internet. During this period, they first send the first HTTP communication between the server and the client. In the year 1966, the Corrado Bohn contributed to the field of computer science by theorizing the structured programming concepts, and George Boole formalized the Boolean algebra. It is the development which formulates the digital logic in the computer science. In the year 1947, the Scientist Kathleen Booth invented the first language assembly while Per Brinch Hansen developed an RC 4000 multiprogramming system which aid in the introduction of the operating system kernel concepts. It also contributed to the separation of the mechanisms and policy. On the other, in 1930, Venner Bush invented the analog computing which comprises of the Memex concepts which aided in the development of the Hypertext while Fred Brooks also played a role in the development the mythical man-month in the period between 1959 to 1995. Also, in the year 1972, Karen Spark was one of the pioneers of information retrieval and natural language processing. On the other hand, others like Grace Hopper, Edsger Dijkstra, and

Douglas Engelbart pioneered high-level programming languages, the structured programming and the use of computer mouse respectively.

It is through the information provided by these scientists and mathematicians who have made the computer and other technical knowledge to be in existence today. It has led to the creation of opportunities in which problems are solved, and solutions are improved. It has also led to the provision of protection of the people and organizations; it has provided a basis for further education, it has improved the communication and sharing of information and aided in organizing and streamlining philanthropy. Therefore, it can be evident that the works of the pioneers contribute positively to the growth and prosperity of the society at large.

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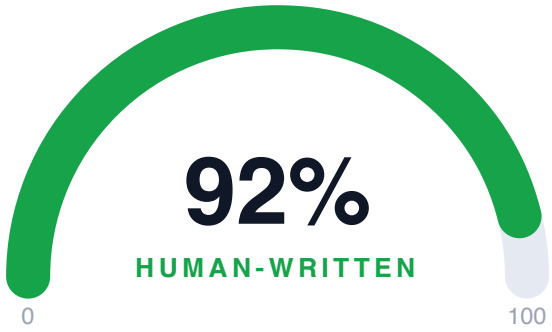

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