John Vincent Atanasoff: Inventor of the Digital Computer

From an early age, John Vincent Atanasoff (October 4, 1903 – June 15, 1995) was fascinated by computing devices. Fascinated by the precision he could achieve when using a slide rule, he decided to test the limits of calculation ability. He experimented with solving complicated equations, and studied logarithms. His mother, a mathematics teacher, introduced him to binary. It was then that Atanasoff became aware of many alternatives to approaching a computational task.

Around 1926 at Iowa State College, where he attended college, Atanasoff studied “slave” techniques when using mechanical Monroe calculators and the IBM Tabulators– the best calculating devices available during that time. (Slaving was a technique where multiple devices were used in a particular combination to make a calculation more efficient – similar to splitting work up and working as a team). When working on his doctoral on theoretical physics at the University of Wisconsin at Madison in 1930, Atanasoff was constantly impeded by the drudgery of these exact mechanical computers. With his early exposure to alternate computing methods, Atanasoff knew that a change needed to be made.

After a drive to Rock Island Illinois during the winter of 1937-1938, the then-professor suddenly realized several key components of a new computing device. With a new grant, John Vincent Atanasoff and his assistant Clifford Berry made a prototype of their new Atanasoff-Bery Computer (ABC). Atanasoff had created the first digital computer .

The ABC used three knew innovations that are still in-use today. The first is the usage of binary to represent numerical values. His design used vacuum tubes. This technology was used in the following ENIAC and EDVAC devices. The second new technological invention was preforming all computations electronically, rather than the traditional mechanical methods of the time. In fact, his memory device consisted of a metal drum covered completely with capacitors that would spin once per second. The final innovation included in the ABC was the separation of the computation and memory.

In all, John Vincent Atanasoff was a revolutionary pioneer of computing. Without him, the development of modern computing could have been delayed countless years. His success is to be attested most greatly to his education, in addition to the brilliance of the man himself.

Works Cited

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