



Claude Shannon

1916-2001

Claude Shannon, an American electrical engineer and mathematician wrote the 1948 paper that launched the field of Information Theory. The Theory presents the basic concepts that underlie modern analyses of digital transmission and encoding, fundamental to the development of digital imaging systems.

As a 21-year-old Master's student at MIT, Shannon's 1937 thesis provided a demonstration of how electrical circuits could solve Boolean and mathematical problems. Starting in the early 1940's Shannon worked at Bell Labs. There he published his classical papers on various landmark concepts. In 1949 he published a proof of what is now known as the Whittaker-Shannon-Kotelnikov Sampling Theorem which states that to reproduce any frequency within a sampled system, the sampling rate must be at least twice that of the target frequency. Among many other contributions, Shannon also developed the concept of "information entropy," a basis for many contemporary image compression techniques. Shannon accepted an endowed chair at MIT in 1956. He earned the National Medal of Science in 1966 and was inducted into the National Inventors Hall of Fame in 2004.