DIGITAL SIGNAL PROCESSING: ROAD TO THE FUTURE

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Abstract

The field of digital signal processing (DSP) has been a very active area of research and application for more than 3 decades. This broad development has paralleled in time the rapid development of high-speed electronic digital computers, microelectronics, and integrated circuit fabrication technologies. An ever-increasing assortment of integrated circuits specifically tailored to perform common DSP functions is available to the design engineer as system building blocks or parts-in-trade. DSP methodologies have been applied to consumer electronics, communications, automotive electronics, instrumentation, medical electronics, tomography and acoustic imaging, cartography, seismology, speech recognition, robotics etc. In this talk we first provide a brief overview of the initial developments in DSP, followed by a review of some of the important advances made during the thirty year period of its growth, and describe a number of key applications. We conclude with a speculation on the future trends and directions.