Abstract

Interest in Application Specific Instruction set Processors or ASIPs has increased significantly. Sincere efforts have been put in improving ASIP design methodologies in industry as well as in academia. By the close observation and analysis of these approaches, it was found that though the existing approaches are focusing on making the process automatic and providing better GUI to help the designers, core technique used in deciding the suitable architecture (processor and memory) is based on design space exploration. This exploration is done with the help of estimators. Such estimators are either simulator based or scheduler based. This study identifies that both types of techniques are very far from the ideal dream technique in which applications should have defined the suitable architecture configuration and these techniques are becoming unsuitable in current scenario. Each problem has a solution hidden in it. This scenario motivated us to propose a novel and revolutionary ASIP design technique making the dream true. The Proposed technique does not focuses on design space exploration, it focuses on directly defining processors for given applications rather than searching for suitable configuration in a jungle of configurations can be suggested by the architecture design space.

References


\textbf{Index Terms}

Computer Science \hspace{1cm} Architecture

\textbf{Keywords}

Application Specific Instruction Set Processor (ASIP) \hspace{1cm} Embedded System Design

Real-time systems

Design Space Exploration.