Ranging from low-level application and architecture optimizations to high-level modeling and exploration concerns, this text/reference compiles essential research on various levels of abstraction appearing in embedded systems and software design—promoting platform-based design for improved system implementation and modeling and enhanced performance and cost analyses.

Relies upon notions of concurrency and parallelism to satisfy performance and cost constraints resulting from increasingly complex applications and architectures.

Addressing concepts in specification, simulation, and verification in embedded systems and software design, Domain-Specific Processors introduces parameterized architectures and templates for control of design space...applies new VHDL generation tools to investigate the use of truncated multipliers in FIR filter implementations...develops several architectures for discrete wavelet transforms based on their flowgraph representation...details techniques for capturing intra-task parallelism during simulation in the Sesame environment for exploration of design space...describes approaches for power modeling and energy estimation of piecewise regular processor arrays...offers a programming model for single-chip multiprocessing with high power/performance efficiency...and examines an algorithm for computing energy-optimal space-time mappings.

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