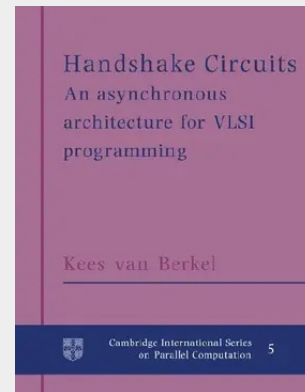


Handshake Circuits

An Asynchronous Architecture for VLSI Programming

'Design by programming' has proved very successful in the development of complex software systems. This book describes the construction of programs for VLSI digital circuit design, using the language Tangram, and shows how they can be compiled automatically in fully asynchronous circuits. Handshake circuits were invented by the author to separate questions involving the efficient implementation of the VLSI circuits from issues arising in their design. Dr van Berkel presents a mathematical theory of handshake circuits and a silicon compiler supported by a correctness proof. The treatment of VLSI realizations of handshake circuits includes various forms of optimization, handshake refinement, message encoding, circuit initialization, and testing. The approach is illustrated with a host of examples drawn from a wide range of application areas. The book will be of use to electrical engineers and computer scientists involved in VLSI design.

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