

# Using Simulink HDL Coder to implement a Fingerprint Recognition Algorithm into an FPGA

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*Abstract* — This work describes a model-based hardware design flow which uses Simulink HDL Coder and Xilinx tools to implement a fingerprint recognition algorithm into a Virtex-6 FPGA. Students can learn how this automated hardware design flow reduces the time to create a prototype since only the high-level description is required. In addition, the fingerprint recognition application allows illustrating how typical processing blocks employed for image processing are used in the context of biometrics security.

*Keywords*—*fingerprint recognition; image processing; automated hardware design; FPGA implementation.*