Floating Point Matrix Multiplication on a Reconfigurable Computing System

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Abstract:

Matrix multiplication is one of the most fundamental and computationally intense operation that is used in a variety of scientific and engineering applications. There are many implementations of this normally O (n^3) operation. These implementations differ mainly in terms of algorithms or the platforms. In this paper we present our experimentation of using a reconfigurable computing platform for calling such a routine. This routine use our own developed IEEE-754 compliant double precision hardware library elements implemented on our own developed FPGA based reconfigurable platform to provide acceleration.