



A SYSTEM FOR FAST 90 DEGREE ROTATION OF BI-LEVEL IMAGES

ABSTRACT

A method for rotating bi-level image data plus or minus 90° . An 8×8 pixel block is selected for rotation from the image data and, using lookup tables, an intermediate matrix is generated dynamically and stored into two 32-bit registers in the processor. Generation of the intermediate matrix partially rotates and stores the odd-numbered rows from the block of data in the first 32-bit register and the even-numbered rows from the block in the second 32-bit register. The first and second registers are copied, respectively, into third and fourth 32-bit registers. The first and second registers are then shifted one bit in opposite directions. The first register is logical ORed with the fourth register, and the second register is logical ORed with the third register so that the even bits are replaced in one register and the odd bits in the other. These steps are repeated for all remaining blocks of image data.

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