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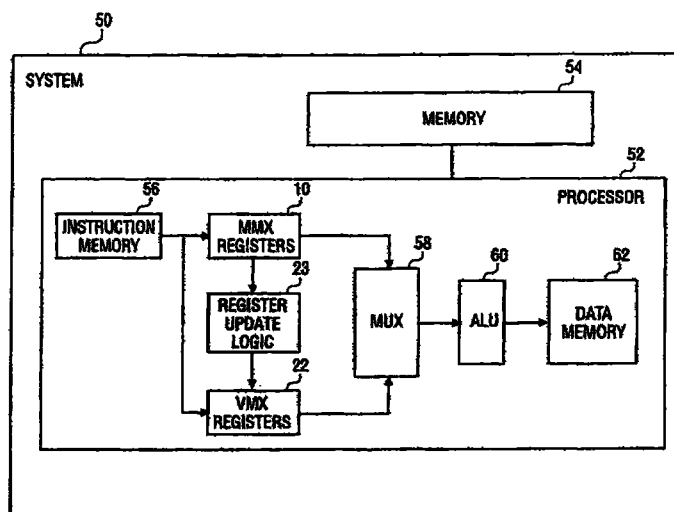
(43) International Publication Date
1 February 2001 (01.02.2001)

PCT

(10) International Publication Number
WO 01/08005 A1

- (51) International Patent Classification⁷: G06F 9/30, 9/302, 9/318
- (21) International Application Number: PCT/US00/17630
- (22) International Filing Date: 26 June 2000 (26.06.2000)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/360,612 26 July 1999 (26.07.1999) US
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- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).
- Published:
— With international search report.
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: REGISTERS FOR 2-D MATRIX PROCESSING



(57) Abstract: A processor has at least two sets of registers. The first set stores a matrix of data, and the second set stores a transposed copy of the matrix of data. When any portion of any row of the first set is modified, the corresponding portion of the column of the transposed copy in the second set is also automatically modified. A method of using two sets of registers for matrix processing by a processor includes storing a matrix of data into a first set of registers, the first set of registers having a first number of registers, each register comprising a first number of storage units, each storage unit storing an element of the matrix, and transposing the matrix of data into a second set of registers, the second set of registers having a second number of registers, each register comprising a second number of storage units. The method also includes referencing one of the first set of registers to operate on a row of the matrix of data, and referencing one of the second set of registers to operate on a column of the matrix of data.

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