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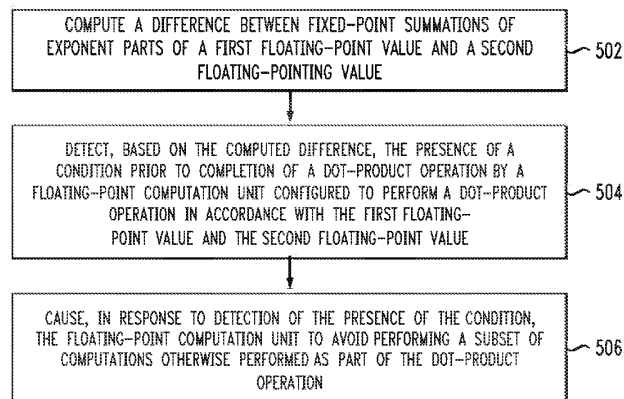
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(54) Title: FLOATING-POINT COMPUTATION WITH THRESHOLD PREDICTION FOR ARTIFICIAL INTELLIGENCE
SYSTEM

FIG. 5

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(57) Abstract: A system comprises a floating-point computation unit configured to perform a dot-product operation in accordance with a first floating-point value and a second floating-point value, and detection logic operatively coupled to the floating-point computation unit. The detection logic is configured to compute a difference between fixed-point summations of exponent parts of the first floating-point value and the second floating-point value and, based on the computed difference, detect the presence of a condition prior to completion of the dot-product operation by the floating-point computation unit. In response to detection of the presence of the condition, the detection logic is further configured to cause the floating-point computation unit to avoid performing a subset of computations otherwise performed as part of the dot-product operation. Such techniques serve as a predictor that the avoided subset of computations would have resulted in a dot product of the two floating-point values being below a threshold value.

[Continued on next page]

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