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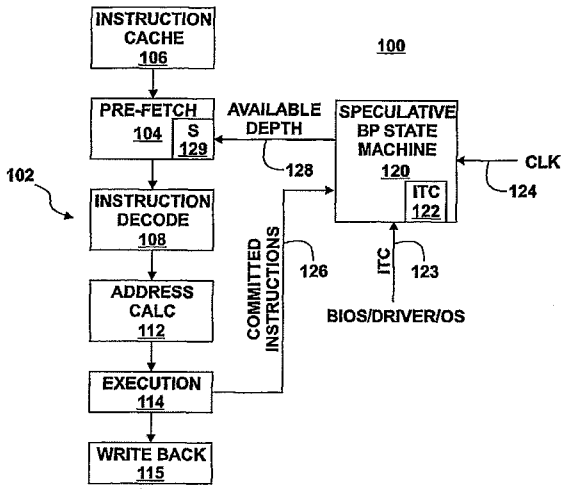
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(54) Title: SYSTEM FOR SPECULATIVE BRANCH PREDICTION OPTIMIZATION AND METHOD THEREOF



(57) Abstract: A value representative of a processor's speculative branch prediction efficiency is determined and the speculative branch prediction depth is adjusted accordingly. The processor's speculative branch prediction efficiency may be represented by the average number of clocks per instruction (CPI), whereby an increase in the average CPI indicates that the processor is becoming less efficient due to incorrectly predicted speculative branch predictions and, conversely, a decrease indicates that the processor has a higher ratio of properly predicted speculative branch predictions. Thus, when the processor is more effectively predicting speculative branch predictions, the available speculative branch prediction depth for the processor may be increased to take advantage of this increased efficiency, and when the processor is less effectively predicting speculative branch predictions, the available speculative branch prediction depth may be decreased to reduce or minimize the processing cycles and power used by the processor in pursuing erroneous speculative branch predictions.

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