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(54) Title: ARTIFICIAL INTELLIGENCE-BASED BASE CALLING OF INDEX SEQUENCES

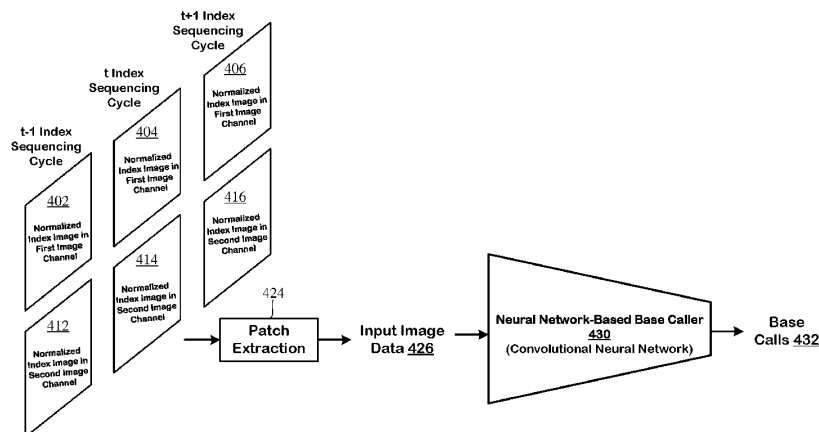


FIG. 4

(57) Abstract: The technology disclosed relates to artificial intelligence-based base calling of index sequences. The technology disclosed accesses index images generated for the index sequences during index sequencing cycles of a sequencing run. The index images depict intensity emissions generated as a result of nucleotide incorporation in the index sequences during the sequencing run. The technology disclosed normalizes an index image from a current index sequencing cycle based on (i) intensity values of index images from one or more preceding index sequencing cycles, (ii) intensity values of index images from one or more succeeding index sequencing cycles, and (iii) intensity values of index images from the current index sequencing cycle. The technology disclosed processes normalized versions of the index images through a neural network-based base caller and generates a base call for each of the index sequencing cycles, thereby producing index reads for the index sequences.

[Continued on next page]

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