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(54) Title: MACHINE-LEARNING MODEL FOR DETECTING A BUBBLE WITHIN A NUCLEOTIDE-SAMPLE SLIDE FOR SEQUENCING

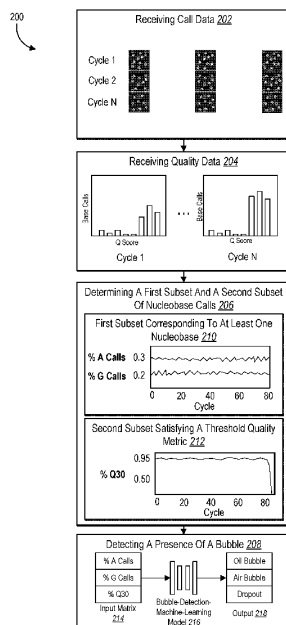


Fig. 2

(57) Abstract: Methods, systems, and non-transitory computer readable media are disclosed for accurately and efficiently detect when bubbles impact nucleic-acid-sequencing runs based on data captured during (or derived from) base calls during sequencing runs. In particular, in one or more embodiments, the disclosed systems receive data identifying nucleobase calls and data identifying quality metrics for the nucleobase calls during sequencing cycles. Based on particular nucleobase calls and threshold markers for the quality metrics, the disclosed system utilizes a machine-learning-model to detect a presence of a bubble in a nucleotide-sample slide. Beyond simply detecting the presence of a bubble, the disclosed system can also classify different detected bubbles, such as air bubbles, oil bubbles, or ghost bubbles, or other outputs during sequencing. By utilizing call data and quality metrics, the disclosed system can use readily available sequencing data in a platform-agnostic approach to detect bubbles using a uniquely trained machine-learning model.

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