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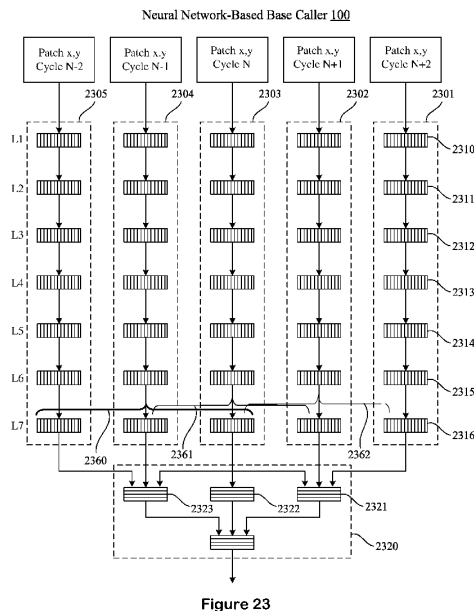
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(57) Abstract: The technology disclosed relates to a system that comprises a spatial convolution network and a bus network. The spatial convolution network is configured to process a window of per-cycle sequencing image sets on a cycle-by-cycle basis by separately processing respective per-cycle sequencing image sets through respective spatial processing pipelines to generate respective per-cycle spatial feature map sets for respective sequencing cycles. The bus network is configured to form buses between spatial convolution layers within the respective spatial processing pipelines. The buses are configured to cause respective per-cycle spatial feature map sets generated by two or more spatial convolution layers in a particular sequence of spatial convolution layer for a particular sequencing cycle to combine into a combined per-cycle spatial feature map set, and provide the combined per-cycle spatial feature map set as input to another spatial convolution layer in the particular sequence of spatial convolution layer.

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