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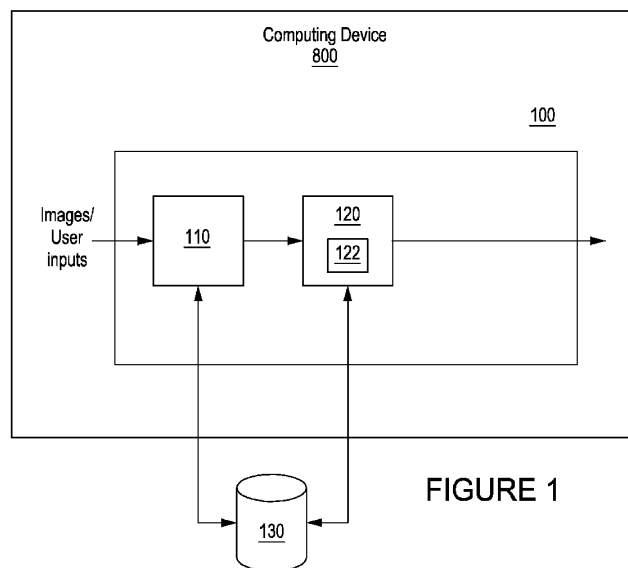


FIGURE 1

(57) Abstract: A method and apparatus for training a learning model for the automatic detection and classification of defects on wafers includes receiving labeled images of wafer defects having multiple defect classifications, creating a first training set including the received labeled images of wafer defects, training the machine learning model to automatically detect and classify wafer defects in a first stage using the first training set, blending at least one set of at least two labeled images having different classifications to generate additional labeled image data, creating a second training set including the blended, additional labeled image data, and training the machine learning model to automatically detect and classify wafer defects in a second stage using the second training set. The trained machine learning model can then be applied to at least one unlabeled wafer image to determine at least one defect classification for the at least one unlabeled wafer image.

[Continued on next page]

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