Claims

1. A method comprising: receiving, at a processor, an initial probability of occurrence of a stochastic defect over a layout of a workpiece, wherein the initial probability of occurrence of a stochastic defect is generated using a model; selecting, using a processor, a subset of locations on the workpiece where the initial probability is above a threshold; grouping, using the processor, the subset of locations by pattern shapes on the workpiece; determining, using the processor, an expected defect count for each of the pattern shapes; selecting, using the processor, a subset of the pattern shapes for repair, wherein selecting the subset of pattern shapes for repair includes determining a fraction expected defect count versus fractional location count curve for each of the layouts or determining an expected defect count versus fractional location count curve for each of the layouts; repairing, using the processor, at least one of each of the subset of the pattern shapes thereby generating at least one repaired pattern shape; and inserting, using the processor, the repaired pattern shape into corresponding locations of the layout.
2. The method of claim 1, wherein selecting the subset of pattern shapes for repair includes determining the fraction expected defect count versus the fractional location count curve for each of the layouts.
3. The method of claim 2, wherein the pattern shapes for repair are selected from the fraction expected defect count versus fractional location count curve.
4. The method of claim 1, wherein selecting the subset of pattern shapes for repair includes determining the expected defect count versus the fractional location count curve for each of the layouts.
5. The method of claim 4, wherein the pattern shapes for repair are selected from the expected defect count versus fractional location count curve.
6. A system comprising: an inspection tool configured to image a workpiece; and a processor in electronic communication with the inspection tool, wherein the processor is configured to: receive an initial probability of occurrence of a stochastic defect over a layout of a workpiece, wherein the initial probability of occurrence of a stochastic defect is generated using a model; select a subset of locations on the workpiece where the initial probability is above a threshold; group the subset of locations by pattern shapes on the workpiece; determine an expected defect count for each of the pattern shapes; select a subset of the pattern shapes for repair by determining a fraction expected defect count versus fractional location count curve for each of the layouts or determining an expected defect count versus fractional location count curve for each of the layouts; repair at least one of each of the subset of the pattern shapes thereby generating at least one repaired pattern shape; and insert the repaired pattern shape into corresponding locations of the layout.
7. The system of claim 6, wherein selecting the subset of pattern shapes for repair includes determining the fraction expected defect count versus the fractional location count curve for each of the layouts.
8. The system of claim 7, wherein the pattern shapes for repair are selected from the fraction expected defect count versus fractional location count curve.

9. The system of claim 6, wherein selecting the subset of pattern shapes for repair includes determining the expected defect count versus the fractional location count curve for each of the layouts.
10. The system of claim 9, wherein the pattern shapes for repair are selected from the expected defect count versus fractional location count curve.
11. A non-transitory computer-readable storage medium, comprising one or more programs for executing the following steps on one or more computing devices: receive an initial probability of occurrence of a stochastic defect over a layout of a workpiece, wherein the initial probability of occurrence of a stochastic defect is generated using a model; select a subset of locations on the workpiece where the initial probability is above a threshold; group the subset of locations by pattern shapes on the workpiece; determine an expected defect count for each of the pattern shapes; select a subset of the pattern shapes for repair by determining a fraction expected defect count versus fractional location count curve for each of the layouts or determining an expected defect count versus fractional location count curve for each of the layouts; repair at least one of each of the subset of the pattern shapes thereby generating at least one repaired pattern shape; and insert the repaired pattern shape into corresponding locations of the layout.
12. The non-transitory computer-readable storage medium of claim 11, wherein selecting the subset of pattern shapes for repair includes determining the fraction expected defect count versus the fractional location count curve for each of the layouts, and wherein the pattern shapes for repair are selected from the fraction expected defect count versus fractional location count curve.
13. The non-transitory computer-readable storage medium of claim 11, wherein selecting the subset of pattern shapes for repair includes determining the expected defect count versus the fractional location count curve for each of the layouts, and wherein the pattern shapes for repair are selected from the expected defect count versus fractional location count curve.