WE CLAIM:

1. A method for inspecting an object, the method comprising:

determining one or more properties maps of a three-dimensional (3D) model of an object for each of a plurality of known orientations;

receiving inspection image data indicative of an inspection image of the object, the inspection image comprising a visual image of the object;

determining an orientation of the object in the visual image via a pose recovery regression;

determining guide image data of the object by obtaining a property map from the one or more properties maps associated with the 3D model corresponding to one of the plurality of known orientations of the object in the visual image to provide the guide image data from the orientation,

wherein the guide image data includes a guide image pixel array, the guide image pixel array being formed of a plurality of guide image pixels, and each guide image pixel of the plurality of guide image pixels includes a pixel property associated with the property map, and

wherein the pixel property is determined by estimating the pixel property for each guide image pixel of the plurality of guide image pixels in the property map,

associating the guide image data with the pixel property for each guide image pixel of the plurality of guide image pixels in the guide image pixel array;

associating the inspection image data with the guide image pixel array with a processor of a computing device; and

determining one or more properties of the object based on the guide image data and the associated inspection image data, wherein the object is at least a portion of a gas turbine engine blade.

2. The method of claim 1, wherein determining guide image data of the object from the orientation comprises determining guide image data based on an image of a control object.

3. The method of claim 1, wherein the pixel property is an area of the guide image pixel, a distance of the guide image pixel, a color of the guide image pixel, an inclination of the guide image pixel, or a combination thereof.

4. The method of claim 3, wherein the guide image data includes a second pixel property for at least one guide image pixel in the guide image pixel array, wherein the second pixel property is a location of the guide image pixel.

5. The method of claim 1, wherein the pixel property is a set of distances of the guide image pixel relative to one or more respective other guide image pixels.

6. The method of claim 1, wherein the inspection image data comprises an inspection image pixel array, and wherein associating the inspection image data with the guide image data comprises associating the pixel property of at least one guide image pixel with a corresponding inspection image pixel in the inspection image pixel array.

7. The method of claim 6, wherein determining the one or more properties of the object based on the guide image data and the associated inspection image data comprises:

designating a portion of the inspection image pixels through a user input; and

determining the property of the designated portion of the inspection image pixels based on the pixel properties corresponding to the inspection image pixels.

8. The method of claim 1, wherein associating the inspection image data with the guide image data comprises:

determining transform data indicative of an inspection image orientation relative to the orientation associated with the guide image data of the object; and

adjusting the inspection image data or the guide image data in response to the determined transform data.

9. The method of claim 1, comprising initiating a maintenance action of the object in response to determining the one or more properties of the object.

10. The method of claim 1, wherein the inspection image is generated with a borescope camera or an endoscope camera.

11. An inspection system, comprising:

a visual image recording device configured to generate an inspection image of an object; and

a computing system comprising a processor, the computing system configured to:

determine one or more properties maps of a three-dimensional (3D) model of the object for each of a plurality of known orientations;

receive inspection image data indicative of the inspection image of the object, the inspection image comprising a visual image of the object;

determine an orientation of the object in the visual image via a pose recovery regression;

determine guide image data of the object by obtaining a property map from the one or more properties maps associated with the 3D model corresponding to one of the plurality of known orientations of the object in the visual image to provide the guide image data from the orientation,,

wherein the guide image data includes a guide image pixel array, the guide image pixel array being formed of a plurality of guide image pixels, and each guide image pixel of the plurality of guide image pixels includes a pixel property associated with the property map, and

wherein the pixel property is determined by estimating the pixel property for each guide image pixel of the plurality of guide image pixels in the property map,

associate the guide image data with the pixel property for each guide image pixel of the plurality of guide image pixels in the guide image pixel array;

associate the inspection image data with the guide image pixel array with the processor; and

determine one or more properties of the object based on the guide image data and the associated inspection image data, wherein the object is at least a portion of a gas turbine engine blade.

12. The inspection system of claim 11, wherein the computing system is configured to determine the guide image data based on a 3D scan of a control object.

13. The inspection system of claim 11, wherein the pixel property is an area of the guide image pixel, a distance measurement of the guide image pixel, a color of the guide image pixel or a combination thereof.

14. The inspection system of claim 11, wherein the pixel property is a set of distance measurements of the guide image pixel relative to one or more respective other guide image pixels.

15. The inspection system of claim 11, wherein the pixel property is an area of the guide image pixel.

16. The inspection system of claim 11, wherein the computing system determines the one or more properties of the object based on the guide image data and the associated inspection image data by:

designating a portion of inspection image pixels of the inspection image through a peripheral device; and

determining the property of the designated portion of the inspection image pixels based on the pixel properties corresponding to the inspection image pixels.

17. The method of claim 1, wherein determining the orientation of the object is based at least in part on an estimated orientation of the object in the visual image.

18. The inspection system of claim 11, wherein determining the orientation of the object is based at least in part on an estimated orientation of the object in the visual image.