

What is claimed is:

1. A computer-implemented method for analyzing an electronic image corresponding to a specimen, the method comprising:
receiving a target electronic image corresponding to a target specimen, the target specimen comprising a tissue sample of a patient;
applying a machine learning system to the target electronic image to determine at least one characteristic of the target specimen and/or at least one characteristic of the target electronic image, the machine learning system having been generated by processing a plurality of training images to predict at least one characteristic, the training images comprising images of human tissue and/or images that are algorithmically generated; and
outputting the target electronic image identifying an area of interest based on the at least one characteristic of the target specimen and/or the at least one characteristic of the target electronic image.
2. The computer-implemented method of claim 1, wherein the identifying the area of interest comprises displaying a heat map overlay on the target electronic image.
3. The computer-implemented method of claim 1, wherein the identifying the area of interest comprises displaying a heat map overlay on the target electronic image, the heat map overlay comprising shading and/or coloration based on a predicted likelihood that a location contains an abnormality.
4. The computer-implemented method of claim 1, wherein the identifying the area of interest comprises displaying a heat map overlay on the target electronic image, the

heat map overlay comprising shading and/or coloration based on a predicted likelihood that a location contains an abnormality,

wherein the heat map overlay is transparent or translucent.

5. The computer-implemented method of claim 1, further comprising displaying a magnification window over at least a portion of the target electronic image, and presenting, in the magnification window, a magnified image of the target specimen at a magnification level that is different than a magnification level of the target electronic image.

6. The computer-implemented method of claim 1, further comprising displaying a magnification window over at least a portion the target electronic image; and presenting, in the magnification window, a magnified image of the target specimen at a magnification level that is different than a magnification level of the target electronic image,

wherein the magnification window comprises a selectable icon for toggling a heat map overlay onto the magnified image.

7. The computer-implemented method of claim 1, further comprising:
displaying a slide tray tool identifying an overview of the target specimen on the target electronic image;
applying the machine learning system to the target electronic image to determine whether a part of the target specimen contains an abnormality; and
in response to determining the part contains an abnormality, presenting an indicator of the abnormality in the slide tray tool.

8. The computer-implemented method of claim 1, further comprising:
- displaying an annotation log comprising an indicator identifying the area of interest and a consultation request related to the area of interest.
9. The computer-implemented method of claim 1, further comprising:
- receiving a second target electronic image corresponding to the target specimen;
- determining a first portion of the target specimen associated with the target electronic image;
- determining a second portion of the target specimen associated with the second target electronic image;
- identifying whether the first portion and the second portion are identical or overlapping;
- in response to identifying that the first portion and the second portion are identical or overlapping, displaying a first representation of the target electronic image and a second representation of the second target electronic image in predetermined proximity to each other;
- determining whether there exists an area of interest associated with the target electronic image and/or an area of interest associated with the second target electronic image;
- in response to determining the area of interest associated with the target electronic image, displaying an indicator associated with the first representation of the target electronic image; and

in response to determining the area of interest associated with the second target electronic image, displaying an indicator associated with the second representation of the second target electronic image.

10. A system for analyzing an electronic image corresponding to a specimen, the system comprising:

at least one memory storing instructions; and

at least one processor executing the instructions to perform a process including:

receiving a target electronic image corresponding to a target specimen, the target specimen comprising a tissue sample of a patient;

applying a machine learning system to the target electronic image to determine at least one characteristic of the target specimen and/or at least one characteristic of the target electronic image, the machine learning system having been generated by processing a plurality of training images to predict at least one characteristic, the training images comprising images of human tissue and/or images that are algorithmically generated; and

outputting the target electronic image identifying an area of interest based on the at least one characteristic of the target specimen and/or the at least one characteristic of the target electronic image.

11. The system of claim 10, wherein the identifying the area of interest comprises displaying a heat map overlay on the target electronic image.

12. The system of claim 10, wherein the identifying the area of interest comprises displaying a heat map overlay on the target electronic image, the heat map overlay

comprising shading and/or coloration based on a predicted likelihood that a location contains an abnormality.

13. The system of claim 10, wherein the identifying the area of interest comprises displaying a heat map overlay on the target electronic image, the heat map overlay comprising shading and/or coloration based on a predicted likelihood that a location contains an abnormality,

wherein the heat map overlay is transparent or translucent.

14. The system of claim 10, further comprising displaying a magnification window over at least a portion of the target electronic image, and
presenting, in the magnification window, a magnified image of the target specimen at a magnification level that is different than a magnification level of the target electronic image.

15. The system of claim 10, further comprising displaying a magnification window over at least a portion the target electronic image; and
presenting, in the magnification window, a magnified image of the target specimen at a magnification level that is different than a magnification level of the target electronic image,

wherein the magnification window comprises a selectable icon for toggling a heat map overlay onto the magnified image.

16. The system of claim 10, further comprising:

displaying a slide tray tool identifying an overview of the target specimen on the target electronic image;

applying the machine learning system to the target electronic image to determine whether a part of the target specimen contains an abnormality; and

in response to determining the part contains an abnormality, presenting an indicator of the abnormality in the slide tray tool.

17. The system of claim 10, further comprising:

displaying an annotation log comprising an indicator identifying the area of interest and a consultation request related to the area of interest.

18. The system of claim 10, further comprising:

receiving a second target electronic image corresponding to the target specimen;

determining a first portion of the target specimen associated with the target electronic image;

determining a second portion of the target specimen associated with the second target electronic image;

identifying whether the first portion and the second portion are identical or overlapping;

in response to identifying that the first portion and the second portion are identical or overlapping, displaying a first representation of the target electronic image and a second representation of the second target electronic image in predetermined proximity to each other;

determining whether there exists an area of interest associated with the target electronic image and/or an area of interest associated with the second target electronic image;

in response to determining the area of interest associated with the target electronic image, displaying an indicator associated with the first representation of the target electronic image; and

in response to determining the area of interest associated with the second target electronic image, displaying an indicator associated with the second representation of the second target electronic image.

19. A non-transitory computer-readable medium storing instructions that, when executed by a processor, cause the processor to perform a method for analyzing an electronic image corresponding to a specimen, the method comprising:

receiving a target electronic image corresponding to a target specimen, the target specimen comprising a tissue sample of a patient;

applying a machine learning system to the target electronic image to determine at least one characteristic of the target specimen and/or at least one characteristic of the target electronic image, the machine learning system having been generated by processing a plurality of training images to predict at least one characteristic, the training images comprising images of human tissue and/or images that are algorithmically generated; and

outputting the target electronic image identifying an area of interest based on the at least one characteristic of the target specimen and/or the at least one characteristic of the target electronic image.

20. The non-transitory computer-readable medium of claim 19, wherein the identifying the area of interest comprises displaying a heat map overlay on the target electronic image, the heat map overlay comprising shading and/or coloration based on a predicted likelihood that a location contains an abnormality.