CLAIMS:

1. A method for generating a feline comfort level classification, the method comprising:

receiving one or more images of a feline;

generating a feline classification from the images with a feline classification model, wherein the feline classification corresponds to a feline type;

selecting a face detection model from one or more face detection models, wherein the selected face detection model corresponds to the feline type;

generating a positive facial indication for one or more of the images with the selected face detection model;

selecting a comfort level classification model from one or more comfort level classification models, wherein the selected comfort level classification model corresponds to the feline type; and

generating a feline comfort level classification from the images with the selected comfort level classification model.

2. The method according to claim 1, wherein the feline classification model comprises a machine-learning algorithm trained with a set of feline training images, wherein each of the feline training images comprises an image classified as either depicting a feline or not depicting a feline.

3. The method according to claim 1, wherein the feline classification model comprises a machine-learning algorithm trained with a set of feline training images, wherein each of the feline training images comprises an image classified as depicting a feline of a feline type from among a group of two or more feline types, or not depicting a feline of any of the feline types.

4. The method according to claim 3, wherein the group of feline types includes: brachycephalic, dolichocephalic, and mesocephalic.

5. The method according to any one of claims 1 to 4, wherein the face detection model comprises a machine-learning algorithm trained with a set of facial training images,

wherein each of the facial training images comprise an image classified as either depicting a face of the feline type or not depicting a face of the feline type.

6. The method according to any one of claims 1 to 5, wherein the selected comfort level classification model is a machine-learning algorithm trained with a set of comfort level training images, wherein each of the comfort level training images comprises an image classified with a comfort level.

7. The method according to claim 6, wherein each of the comfort level training images is classified with a comfort level selected from a group comprising two discrete comfort levels.

8. The method according to claim 6, wherein each of the comfort level training images is classified with a comfort level selected from a group comprising two or more of: no pain, mild discomfort, discomfort, extreme discomfort, pain, acute pain, and chronic pain.

9. The method according to any one of claims 1 to 8, wherein generating the feline classification comprises:

generating a set of feline probabilities, wherein each of the feline probabilities corresponds to one of the images and comprises a feline type and a confidence interval; and

generating the feline classification from the set of feline probabilities.

10. The method according to claim 9, wherein generating the feline classification from the set of feline probabilities comprises:

selecting the feline probabilities from the set of feline probabilities with a confidence interval higher than a first threshold confidence interval;

grouping the selected feline probabilities by feline type;

averaging the confidence intervals of the feline probabilities in each feline type group; and

generating the feline classification based at least in part on the feline type of the group with the highest average confidence interval.

11. The method according to either of claims 9 and 10, wherein generating the positive facial indication comprises:

selecting the feline probabilities from among the set of feline probabilities with a confidence interval higher than a second threshold confidence interval and a feline type corresponding to the feline classification;

selecting the images corresponding to the selected feline probabilities;

generating a set of facial probabilities, wherein each of the facial probabilities corresponds to one of the selected images and comprises a facial indication and a confidence interval; and

generating the positive facial indication based at least in part on the set of facial probabilities.

12. The method according to claim 11, wherein generating the positive facial indication from the set of facial probabilities comprises:

selecting the facial probabilities from the set of facial probabilities with a confidence interval higher than a third threshold confidence interval;

averaging the confidence interval of each of the selected facial probabilities to generate an average confidence interval; and

verifying the average confidence interval exceeds a positive facial indication threshold.

13. The method according to any one of claims 9 to 12, wherein generating the feline comfort level classification comprises:

selecting the feline probabilities from the set of feline probabilities with a confidence interval higher than a threshold and a feline type corresponding to the feline classification;

selecting the images corresponding to the selected feline probabilities;

generating a set of comfort level probabilities comprising, for each one of the selected images, a comfort level and a confidence interval; and

generating the feline comfort level classification based at least in part on the set of comfort level probabilities.

14. The method according to claim 13, wherein generating the feline comfort level classification from the set of comfort level probabilities comprises:

selecting the comfort level probabilities from among the set of comfort level probabilities with a confidence interval higher than a threshold comfort confidence interval;

averaging the confidence interval of each of the selected comfort level probabilities for each comfort level; and

generating the feline comfort level classification based at least in part on the comfort level with the highest average confidence interval.

15. The method according to any one of claims 1 to 14, wherein the images form a sequence of video frames.

16. The method according to any one of claims 1 to 15, wherein receiving the images comprises capturing one or more images of the feline with an image capture device.

17. The method according to claim 16, wherein the image capture device comprises a camera of a tablet computer or a camera of a smartphone.

18. An apparatus for generating a feline comfort level classification, the apparatus comprising a memory module storing instructions that when executed by a processor perform the method according to any one of claims 1 to 17.

19. An apparatus according to claim 18, wherein the memory module comprises a memory of a tablet computer or a memory of a smartphone.

20. An apparatus for generating a feline comfort level classification, the apparatus comprising:

an image capture device;

a memory module storing a feline classification model, one or more face detection models, and one or more comfort level classification models;

an output module; and

a processor, wherein the processor is configured to:

operate the image capture device to capture one or more images of a feline;

retrieve the feline classification model from the memory module and generate a feline classification from the images with the feline classification model, wherein the feline classification corresponds to a feline type;

retrieve one of the face detection models from the memory module, wherein the selected face detection model corresponds to the feline type;

generate a positive facial indication for one or more of the images with the selected face detection model;

retrieve one of the comfort level classification models from the memory module, wherein the selected comfort level classification model corresponds to the feline type;

generate a feline comfort level classification from the images with the selected comfort level classification model; and

provide output information via the output module based at least in part on the generated feline comfort level classification.