What is claimed is:

1. A medical image-based system for predicting lesion classification, comprising:

a feature data extracting module for providing a raw feature data based on a medical image; and

a predicting module, connecting to the feature data extracting module for outputting a predicted class and a risk index according to the raw feature data, comprising:

a classification unit for generating the predicted class and a prediction score corresponding thereto according to the raw feature data wherein the predicted class comprises a benign class and a malignant class, and the prediction score comprises a benign score corresponding to a benign class and a malignant score corresponding to the malignant class, wherein a sum of the benign score and the malignant score is 1;

a risk evaluation unit for generating the risk index according to the prediction score, wherein the risk index is computed based on a statistical distribution of the prediction scores, wherein the statistical distribution of the prediction scores is the statistical distribution of the benign score and the malignant score; and

a multi-task modeling unit for training the classification unit based on a preliminary prediction class and a preliminary prediction score output by the classification unit according to the raw feature data, wherein the multi-task modeling unit generates an adjusting parameter according to the preliminary prediction class and the preliminary prediction score, wherein:

the preliminary prediction class comprises a benign class or a malignant class, and wherein the preliminary prediction score comprises a first preliminary prediction score, a second

preliminary prediction score, a third preliminary prediction score, a fourth preliminary prediction score or a combination of two or more thereof, wherein the multi-task modeling unit comprises:

a first comparing unit for comparing a first prediction class and a first true class so as to output the first preliminary prediction score (L1) according to a first cross entropy loss function of the first prediction class and the first true class, wherein a mathematical formula as follows: L1=CrossEntropy({the benign class}, {the malignant class}), wherein the first prediction class is the benign class, and the first true class is the malignant class, wherein the benign class comprises a first benign class, a second benign class and a third benign class, and wherein the malignant class comprises a first malignant class, a second malignant class and a third malignant class;

a second comparing unit for comparing a second prediction class and a second true class so as to output the second preliminary prediction score (L2) according to a second cross entropy loss function of the second prediction class and the second true class, wherein a mathematical formula as follows: L2=CrossEntropy({2,3}, {4a,4b,4c,5}), wherein the second prediction class is the first benign class and the second benign class, and the second true class is the third benign class and the malignant class; wherein the first benign class is denoted as category 2, the second benign class is denoted as category 3, the third benign class is denoted as category 4a, the first malignant class is denoted as category 4b, the second malignant class is denoted as category 4c, and the third malignant class is denoted as category 5 according to BI-RADS standards;

a third comparing unit for comparing a third prediction class and a third true class so as to output the third preliminary prediction score (L3) according to a third cross entropy loss function of the third prediction class and the third true class, wherein a mathematical formula as follows: L3=CrossEntropy({2,3,4a,4b},{4c,5}), wherein the third prediction class is the benign class and the first malignant class, and the third true class is the second malignant class and the third malignant class;

a fourth comparing unit for comparing a fourth prediction class, a fourth true class, and a reference class so as to output the fourth preliminary prediction score (L4) according to a fourth cross entropy loss function of the fourth prediction class, the fourth true class, and the reference class, wherein a mathematical formula as follows: L4=CrossEntropy({2}, {3, 4a, 4b, 4c}, {5}), wherein the fourth prediction class is the first benign class, the fourth true class is the second benign class, the third benign class, the first malignant class and the second malignant class, and the reference class is the third malignant class; and

a regression unit for regression analysis of the preliminary prediction class and outputting a regression score ($L_{regression}$), and the multi-task modeling unit generates the adjusting parameter (L) according to the regression score, the first preliminary prediction score, the second preliminary prediction score, the third preliminary prediction score and the fourth preliminary prediction score, wherein a mathematical formula as follows: $L=L_{regression}+L1+L2+L3+L4$.

2. The system according to claim 1, wherein the medical image is a

lesion image comprising ultrasound image, Magnetic Resonance Imaging (MRI) image, X-ray image, Computed Tomography (CT) image, Positron Emission Tomography (PET) image, Single-Photon Emission Computed Tomography (SPECT) image, Mammograhy image, Endoscopic image, fluoroscopy image or nuclear medicine image.

3. The system according to claim 5, wherein the lesion comprises a nodule resulting from breast cancer, lung cancer, thyroid cancer, skin cancer, ovarian cancer, testicular cancer, renal cell carcinoma, pancreatic cancer, colorectal cancer, or lymphoma.

4. A method for predicting lesion classification based on medical image, comprising:

inputting a raw feature data;

outputting a predicted class, a prediction score and a risk index, wherein the prediction score is output corresponding to the predicted class, and the risk index is generated according to the prediction score, wherein the risk index is computed based on a statistical distribution of the prediction scores, wherein the predicted class comprises a benign class and a malignant class, and the prediction score comprises a benign score corresponding to a benign class and a malignant score corresponding to the malignant class, wherein a sum of the benign score and the malignant score is 1, and wherein the statistical distribution of the prediction scores is the statistical distribution of benign score and the malignant score; and

wherein in a pre-train phase, the method further comprises:

outputting a preliminary prediction class and a preliminary prediction score according to the raw feature data, wherein: the preliminary prediction class comprises a benign class or a malignant class, and wherein the preliminary prediction score comprises a first preliminary prediction score, a second preliminary

prediction score, a third preliminary prediction score, a fourth preliminary prediction score or a combination of two or more thereof; and

outputting an adjusting parameter by running a multi-task model according to the preliminary prediction class and the preliminary prediction score, wherein the running multi-task model comprises:

outputting the first preliminary prediction score (L1) by comparing a first prediction class and a first true class and by calculating according to a first cross entropy loss function, wherein a mathematical formula as follows: L1=CrossEntropy({the benign class}, {the malignant class}), wherein the first prediction class is the benign class, and the first true class is the malignant class, wherein the benign class comprises a first benign class, a second benign class and a third benign class, and wherein the malignant class comprises a first malignant class, a second malignant class and a third malignant class;

outputting the second preliminary prediction score (L2) by comparing a second prediction class and a second true class and by calculating according to a second cross entropy loss function, wherein a mathematical formula as follows: L2=CrossEntropy({2,3}, {4a,4b,4c,5}), wherein the second prediction class is the first benign class and the second benign class, and the second true class is the third benign class and the malignant class; wherein the first benign class is denoted as category 2, the second benign class is denoted as category 3, the third benign class is denoted as category 4a, the first malignant class is denoted as category 4b, the second malignant class is denoted as category 4c, and the third malignant class is denoted as category 5 according to BI-RADS

standards;

outputting the third preliminary prediction score (L3) by comparing a third prediction class and a third true class and by calculating according to a third cross entropy loss function, wherein a mathematical formula as follows: L3=CrossEntropy({2,3,4a,4b},{4c,5}), wherein the third prediction class is the benign class and the first malignant class, and the third true class is the second malignant class and the third malignant class;

outputting the fourth preliminary prediction score (L4) by comparing a fourth prediction class, a fourth true class, and a reference class and by calculating according to a fourth cross entropy loss function, wherein a mathematical formula as follows: L4=CrossEntropy({2}, {3, 4a, 4b, 4c}, {5}), wherein the fourth prediction class is the first benign class, the fourth true class is the second benign class, the third benign class, the first malignant class and the second malignant class, and the reference class is the third malignant class;

outputting a regression score ($L_{regression}$) by conducting a regression analysis of the preliminary prediction class; and

generating the adjusting parameter (L) according to the regression score, the first preliminary prediction score, the second preliminary prediction score, the third preliminary prediction score and the fourth preliminary prediction score, wherein a mathematical formula as follows: $L=L_{regression}+L1+L2+L3+L4$.