

CLAIMS

1. A dementia prediction method according to patient's gender performed by a computing device for predicting patient's dementia, the dementia prediction method comprising:

obtaining, via the computing device, data corresponding to dementia risk factors according to gender of a test subject; and

predicting dementia of the test subject by inputting the data corresponding to the dementia risk factors according to the gender of the test subject into a dementia prediction model,

wherein the dementia prediction model is a model that learns the dementia risk factors according to the gender by extracting features of men's dementia risk factors and women's dementia risk factors from cohort data collected from a normal group and a dementia patient group, and

wherein the cohort data includes a plurality of datasets each containing a plurality of features, the plurality of datasets include a first dataset relating to demographic data, a second dataset relating to treatment item and treatment disease data, and a third dataset relating to medical examination history data from body measurements to past medical records, each feature of the plurality of features is divided and classified to identify a time series pattern, and each of the first dataset, the second dataset and the third dataset is feature-grouped.

2. The dementia prediction method of claim 1, wherein the men's dementia risk factors include at least one of diseases of thymus, other disorders of adrenal gland, other disorders of male genital organs, hemiplegia, somnolence, stupor and coma, urethral stricture, and symptoms and signs involving

appearance and behavior.

3. The dementia prediction method of claim 1, wherein the women's dementia risk factors include at least one of inflammatory disease of uterus, except cervix, unspecified urinary incontinence, other disorders of adrenal gland, enlarged lymph nodes, polyp of female genital tract, symptoms and signs involving appearance and behavior, other symptoms and signs involving general sensations and perceptions, hypofunction and other disorders of pituitary gland, systemic inflammatory response syndrome, diseases of thymus, and urethral stricture.

4. The dementia prediction method of claim 1, wherein the dementia prediction model is learned using cohort data collected from a normal group and a dementia patient group within the last 3 years.

5. The dementia prediction method of claim 1, wherein the dementia prediction model calculates an error value by comparing a result of predicting dementia of the test subject predicted using the dementia risk factors determined by the dementia prediction model with whether or not the test subject actually has dementia, and is learned by back-propagating the calculated error value.

6. The dementia prediction method of claim 1, wherein the dementia prediction model is configured with a multi-layer perceptron including a plurality of hidden layers.

7. The dementia prediction method of claim 6, wherein the dementia prediction model uses the Leaky-ReLu function as an activation function of the multi-layer perceptron.

8. The dementia prediction method of claim 1, wherein the dementia prediction model searches for parameters that minimize a loss function using Adam Optimizer.

9. The dementia prediction method of claim 1, wherein the dementia prediction model voids overfitting by using cross validation divided into 10 folds.

10. A dementia prediction apparatus according to patient's gender, the dementia prediction apparatus comprising:

a processor;

a network interface;

a memory that is executed by the processor and loads a computer program; and

a storage for storing the computer program,

wherein the computer program includes instructions of:

obtaining data corresponding to dementia risk factors according to gender from a test subject; and

predicting dementia of the test subject by inputting the data corresponding to the dementia risk factors according to the gender of the test subject into a dementia prediction model, and

the dementia prediction model is

a model that learns the dementia risk factors according to the gender by extracting features of men's dementia risk factors and women's dementia risk factors from cohort data collected from a normal group and a dementia patient group, and

wherein the cohort data includes a plurality of datasets each containing a plurality of features, the plurality of datasets include a first dataset relating to demographic data, a second dataset relating to treatment item and treatment disease data, and a third dataset relating to medical examination history data from body measurements to past medical records, each feature of the plurality of features is divided and classified to identify a time series pattern, and each of the first dataset, the second dataset and the third dataset is feature-grouped.