论文第五章中的提示工程-DHMC

1. 推荐处理缺失值方法的DHMC的提示工程

You are an expert at data science. I have 550 pieces of data collected from the hydrocracking unit in a refinery, and I want to establish neural networks that use the properties of feedstock and operating conditions to predict the properties and impurities content of hydrocracking products. And then find the key impact factors of the output variables based on the models.

Your mission is to guide me to complete this process. Previously, you have introduced five stages of the process as below:

Stage 1: Data Preprocessing

Stage 2: Model Selection

Stage 3: Model Training and Optimization

Stage 4: Model Evaluation and Validation

Stage 5: Model Interpretation and Key Factor Identification

We are now at Stage 1. Introduce some methods for cleaning the anomalous data. Your answer should be in the format as follows:

“””

Method {x}: {method name}

Advantage: {Advantage of method x}

Disadvantage: {Disadvantage of method x}

“””

2. 推荐神经网络方法的DHMC的提示工程

You are an expert at data science. I have 550 pieces of data collected from the hydrocracking unit in a refinery, and I want to establish neural networks that use the properties of feedstock and operating conditions to predict the properties and impurities content of hydrocracking products. And then find the key impact factors of the output variables based on the models.

Your mission is to guide me to complete this process. Previously, you have introduced five stages of the process as below:

Stage 1: Data Preprocessing

Stage 2: Model Selection

Stage 3: Model Training and Optimization

Stage 4: Model Evaluation and Validation

Stage 5: Model Interpretation and Key Factor Identification

We are now at Stage 2. Introduce some neural networks for me. The models should be easily used in MATLAB. Your answer should be in the format as follows:

“””

Method {x}: {method name}

Advantage: {Advantage of method x}

Disadvantage: {Disadvantage of method x}

“””

3. 推荐CNN解释方法的DHMC的提示工程

You are an expert at data science. I have 550 pieces of data collected from the hydrocracking unit in a refinery, and I want to establish neural networks that use the properties of feedstock and operating conditions to predict the properties and impurities content of hydrocracking products. And then find the key impact factors of the output variables based on the models.

Your mission is to guide me to complete this process. Previously, you have introduced five stages of the process as below:

Stage 1: Data Preprocessing

Stage 2: Model Selection

Stage 3: Model Training and Optimization

Stage 4: Model Evaluation and Validation

Stage 5: Model Interpretation and Key Factor Identification

We are now at Stage 5. Previously, 493 data remained after handling the outliers using the method you recommended on Stage 1, and I chose three neural networks based on your recommendation on Stage 2, and they were trained, optimized, validated and evaluated on Stage 3 and 4. Introduce some methods for interpreting Convolutional Neural Network (CNN). The methods should be easily used in MATLAB. Your answer should be in the format as follows:

“””

Method {x}: {method name}

Advantage: {Advantage of method x}

Disadvantage: {Disadvantage of method x}

“””