**Registered Nurse Tenure Prediction Application**

**Overview**

The Registered Nurse Tenure Prediction Application consists of three sections:

*Data Review and Exploration* allows you to view the dataset, statistics, visualizations, and training / test datasets.

*Build and Fit the KNN Model* allows you to select the parameters you wish to use to run a KNN model against the data and view the results. You can also fine-tune the model by selecting different parameters.

*RN Retention Actions* allows you to input parameters about an RN to get a personalized list of suggestions to help with employee engagement.

**Getting Started**

The application is available online at <https://capstone-jennifergurley.streamlit.app/>. No login is required.

If you are unable to access the application, please contact [jennifergurley@gmail.com](mailto:jennifergurley@gmail.com) for assistance.

**DATA REVIEW AND EXPLORATION section**

**Viewing the Dataset**

The dataset will automatically load when you access the application. To view the data, select the ‘View the Registered Nurse Dataset’ link in the main section to expand the screen. You may scroll down or to the right to view all 200 records and 17 columns.

**Reviewing Statistics**

To view basic statistics for the dataset, select the ‘Review Data Statistics’ link in the main section.

**Tenure Categories**

Tenure is the predictive variable for this model and has been divided into three categories: high tenure (7+ years), medium tenure (3-7 years), and low tenure (less than 3 years). You may view these categories by expanding the ‘Add Tenure Categories’ link.

**Reviewing Visualizations**

Visualizations for selected attributes can be viewed by selecting the ‘Data Visualization for Selected Attributes’ link.

**Viewing the Train and Test Datasets**

The dataset has been divided into 80% training and 20% test, which can be viewed by selecting the ‘Training and Test Sets’ link.

**BUILD AND FIT THE KNN MODEL section**

**Setting the KNN Model Parameters**

In the sidebar, you may choose to model data for 2 – 30 nearest neighbors by using the slider or select the Minkowski or Euclidean metric from the drop-down.

You can also fine-tune your selections by expanding the Error Rates, Confusion Matrix, Classification Report, and Plotted Error Rates sections and updating the parameters.

**RN RETENTION ACTIONS section**

**Modeling a Test Case**

Enter basic information about an RN to get a personalized retention actions report based on their degree level and experience as an RN.