**Assignment 3: Extract and Select Features to Improve Model Performance**

This third assignment requires you to extract features and then select features so that your modeling performance can be improved.

1. Process

**Step 1: Extract features.**  A rule of thumb is to extract as many features as you can. Extract statistical features as well as domain-knowledge features.

**Step 2: Select features.**  You can manually select features using your domain knowledge and evaluate the performance given different combinations of features. You can also select features using dimensionality reduction algorithms.

**Step 3: Performance evaluation.**  You need to evaluate the model performance and select the best combination of features.

1. Submission

* You are required to deliver a 10-min presentation in class.
* You also need to write a 1-2 page written report, in IEEE double-column paper format.