Visualization of Method Effectiveness Across Different Scenarios: Confusion Matrices and t-SNE Analysis

To better demonstrate the effectiveness of the proposed method, confusion matrix and t-SNE plots are drawn for four different scenarios: **In-Domain Evaluation, Cross-Condition Generalization, Cross-Domain Generalization, and Cross-Domain and Cross-Condition Generalization**, using different datasets for each.

1. In-Domain Evaluation:

The dataset **CWRU → CWRU** is selected with a fine-tuning sample ratio of 3%. The corresponding confusion matrix and t-SNE plots are shown in Figures 1 and 2.

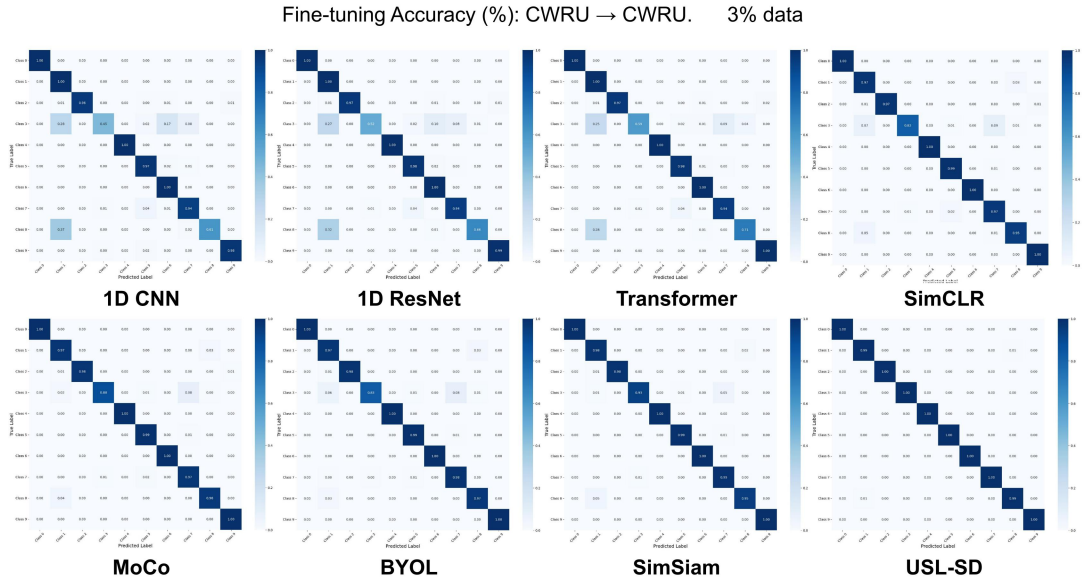

Figure 1. CWRU → CWRU Confusion Matrix

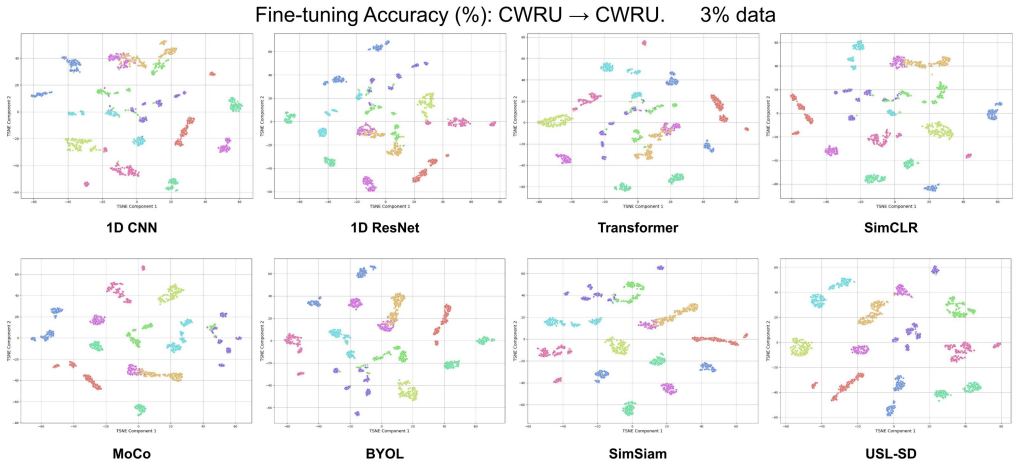

Figure 2. t-SNE of CWRU → CWRU

2. Cross-Condition Generalization:

The dataset **WFD-C → WFD-V** is selected with a fine-tuning sample ratio of 3%. The corresponding confusion matrix and t-SNE plots are shown in Figures 3 and 4.

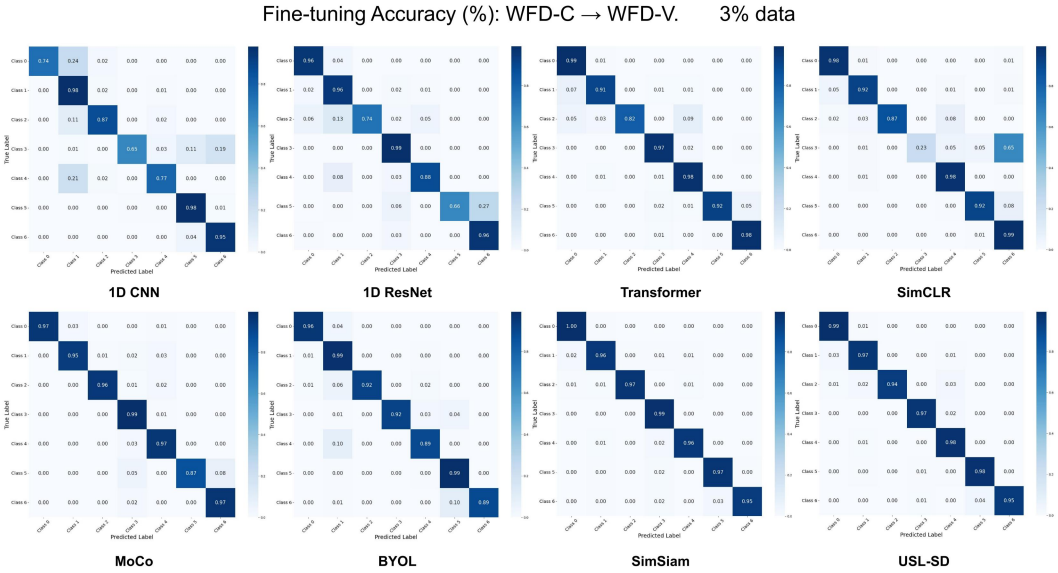

Figure 3. WFD-C → WFD-V Confusion Matrix

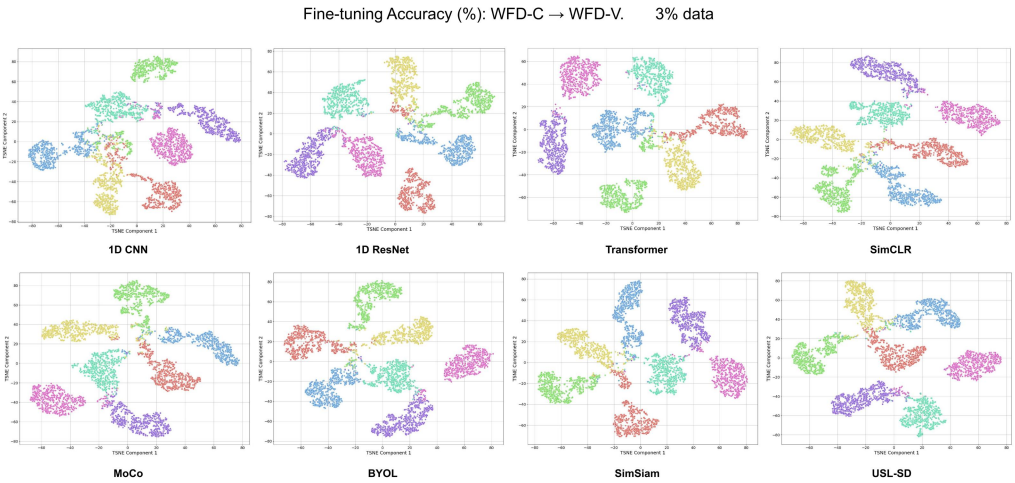

Figure 4. t-SNE of WFD-C → WFD-V

3. Cross-Domain Generalization:

The dataset **CWRU → PU** is selected with a fine-tuning sample ratio of 3%. The corresponding confusion matrix and t-SNE plots are shown in Figures 5 and 6.

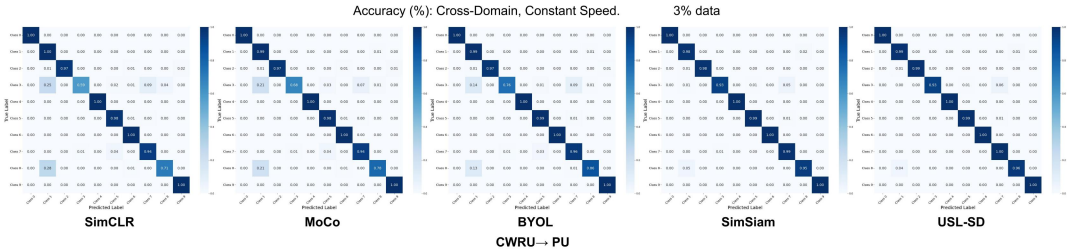

Figure 5. CWRU → PU Confusion Matrix

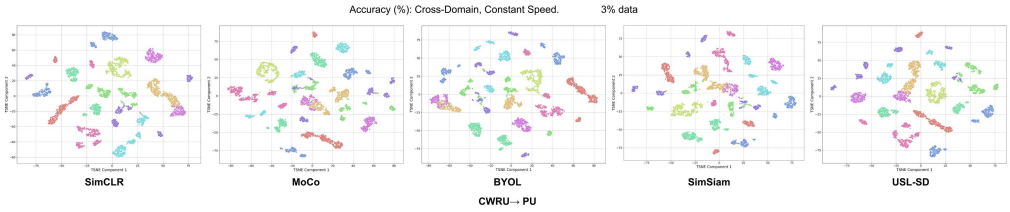

Figure 6. t-SNE of CWRU → PU

4. Cross-Domain and Cross-Condition Generalization:

The datasets **CWRU → WFD-V** and **WFD-C → SQV** are selected with a fine-tuning sample ratio of 3%. The corresponding confusion matrix and t-SNE plots are shown in Figures 7 through 10.

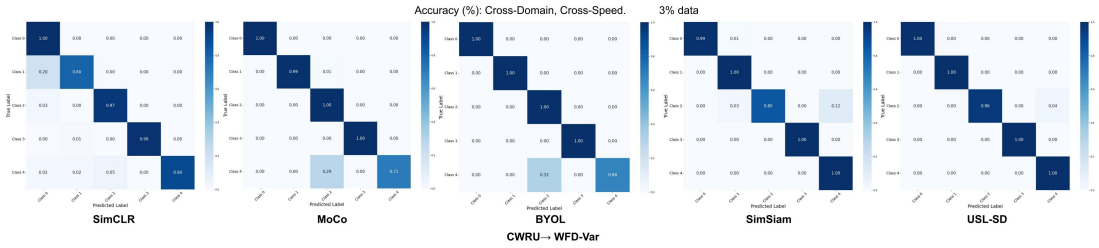

Figure 7. CWRU → WFD-V Confusion Matrix

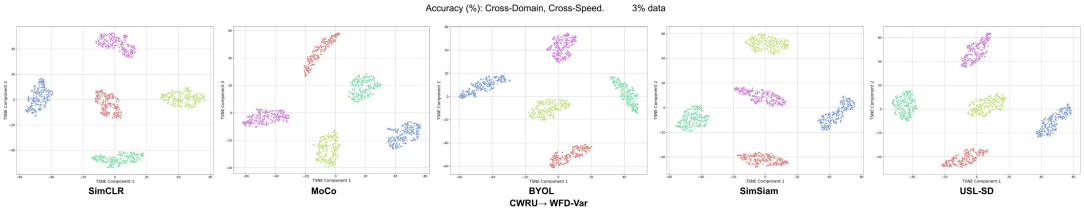

Figure 8. t-SNE of CWRU → WFD-V

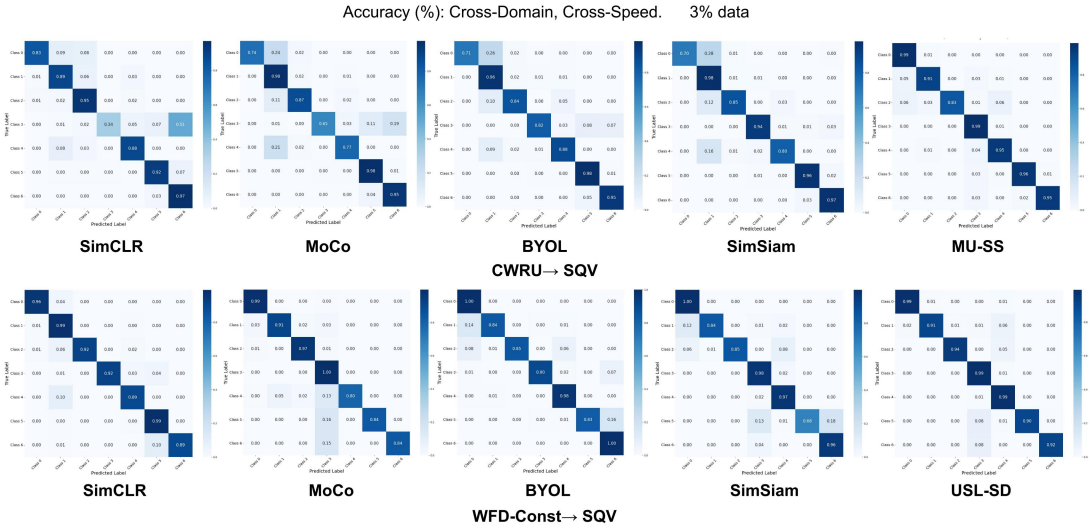

Figure 7. WFD-C → SQV Confusion Matrix

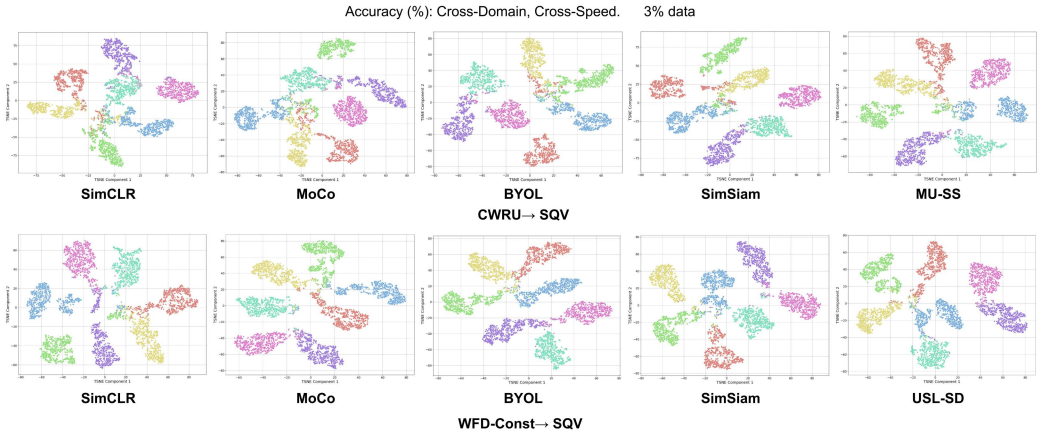

Figure 8. t-SNE of WFD-C → SQV