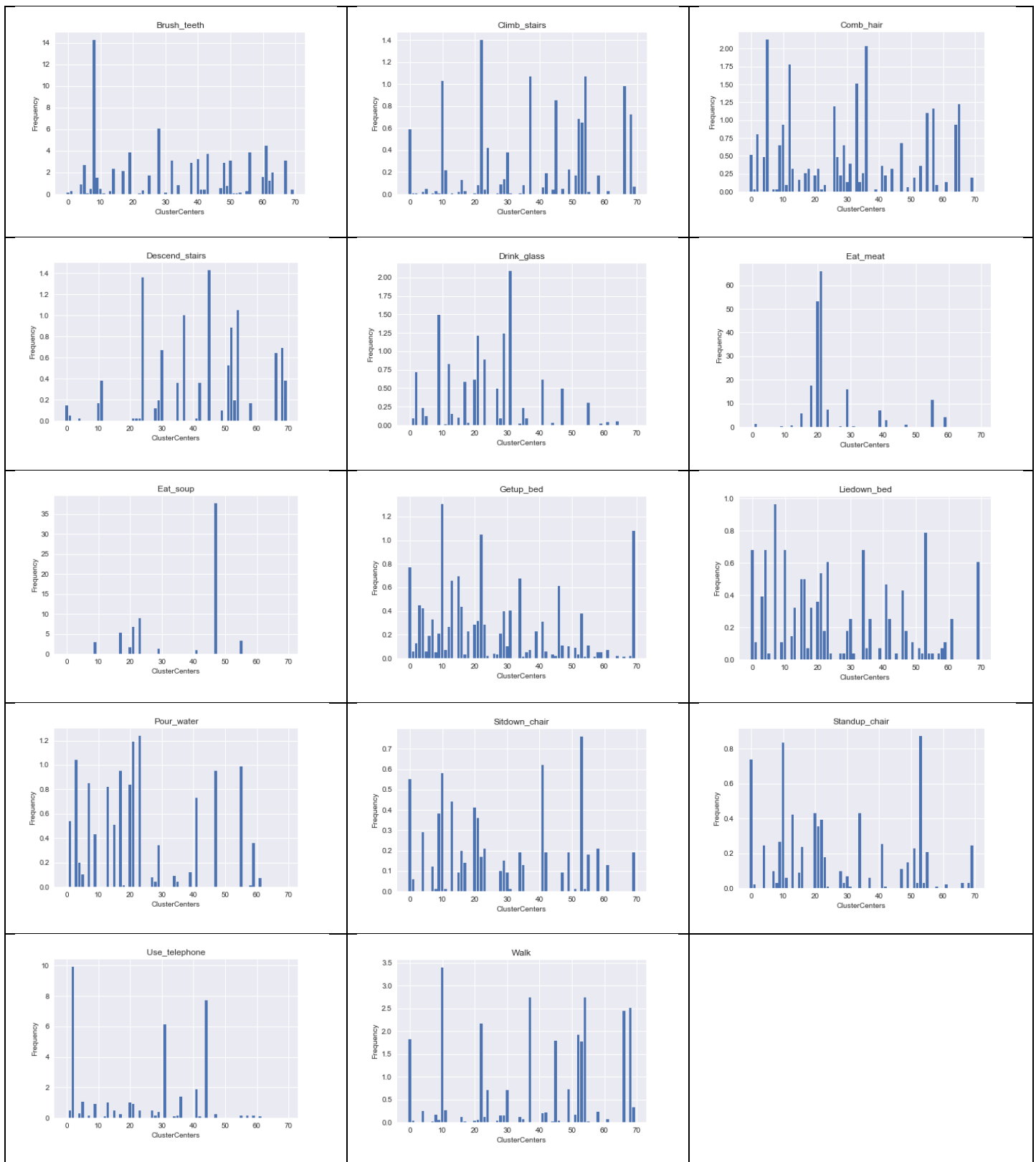# Signal Processing Using Vector Quantization and classification-Results

Experiment table

Fixed Sample Length	Overlap %	K-value (number of cluster centers)	K-Means Used	Classifier Accuracy Across 3 Fold Validation
32	0	70	Standard K-Means	76.49%
32	55	70	Standard K-Means	81.52% (best accuracy)
32	55	350	Standard K-Means	73.02%
24	0	70	Standard K-Means	74.10%
24	55	70	Standard K-Means	73.19%
24	55	350	Standard K-Means	78.25%
64	0	70	Standard K-Means	69.82%
64	55	70	Standard K-Means	73.02%
64	55	350	Standard K-Means	66.90%

Histograms of the mean quantized vector for each activity with K value = 70

Class Confusion matrix

	Confusion Matrix	Class Error %

True Activity Class Labels (rows) / **Predicted Activity Class Labels** (columns)

True \ Predicted	Brush_teeth	Climb_stairs	Comb_hair	Descend_stairs	Drink_glass	Eat_meat	Eat_soup	Getup_bed	Liedown_bed	Pour_water	Sitdown_chair	Standup_chair	Use_telephone	Walk	Class Error %
Brush_teeth	2	0	0	0	0	0	0	0	0	0	0	2	0	0	.5%
Climb_stairs	0	30	0	1	1	0	0	0	0	1	0	0	0	1	.125%
Comb_hair	0	0	8	0	2	0	0	0	0	0	0	0	0	0	.2%
Descend_stairs	0	3	0	7	0	0	0	0	0	0	1	1	0	2	.5%
Drink_glass	0	0	0	0	33	0	0	0	0	0	0	0	0	0	0%
Eat_meat	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0%
Eat_soup	0	0	0	0	0	0	0	0	0	1	0	0	0	0	100%
Getup_bed	0	0	0	0	1	0	0	25	0	0	2	5	0	0	.095%
Liedown_bed	0	1	0	0	0	0	0	3	0	0	3	1	0	1	.33%
Pour_water	0	0	0	0	0	0	0	0	0	33	0	0	0	0	0%
Sitdown_chair	0	0	0	0	0	0	0	0	0	0	28	5	0	0	.15%
Standup_chair	0	0	0	0	1	0	0	3	0	0	3	26	0	1	.26%
Use_telephone	0	0	0	0	1	0	0	0	0	1	0	0	2	0	.5%
Walk	0	1	0	0	0	0	0	0	0	0	1	1	0	30	.09%

Colorbar scale: 0, 6, 12, 18, 24, 30