

CSE523 - Machine Learning

Weekly Report 7

**Classification of Drivers based on their Driving Patterns**

Mentor: Mehul Raval

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| **Roll No.** | **Name** |
| AU2140052 | Ayush Patel |
| AU214202 | Kunj Kanzaria |
| AU2140206 | Rutul Patel |
| AU2140026 | Saumil Patel |

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* Researched and documented the advantages of Kernel K-Means clustering.
* Identified key benefits, including its ability to handle non-linearity in data and to identify features that are not linearly separable in the original feature space.
* Researched common kernel functions used in Kernel K-Means clustering, such as Gaussian (RBF), polynomial, and sigmoid kernels.
* Investigated optimization techniques for cluster centers in kernel space, including gradient descent and Expectation-Optimization algorithms.
* Experimented with different kernel functions to understand their impact on clustering results.

**Challenges Encountered:**

* Understanding the mathematical intricacies behind kernel functions and their application in Kernel K-Means.
* Implementing optimization techniques for cluster center optimization in kernel space effectively.