

SMAI Class 9

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SVM revisited

Support Vectors: Data points closer to the boundary.

- Soft Margin SVM
 - Some outliers are there so boundary is not that clear. So we maintain a soft margin for such cases
- Transductive SVM
 - Many points with no annotation (class label).
 - We still use them to determine the density of the data.
 - Our boundary will exist at the low density region between the high density regions.
- Non-linear SVM
 - Kernelization

Kernel space

For kNN

- $\|x_i - x_j\|^2 = \langle x_i, x_i \rangle + \langle x_j, x_j \rangle - 2\langle x_i, x_j \rangle$
- kernel PCA