

Support Vector Machines



Lightning Talk Presented by

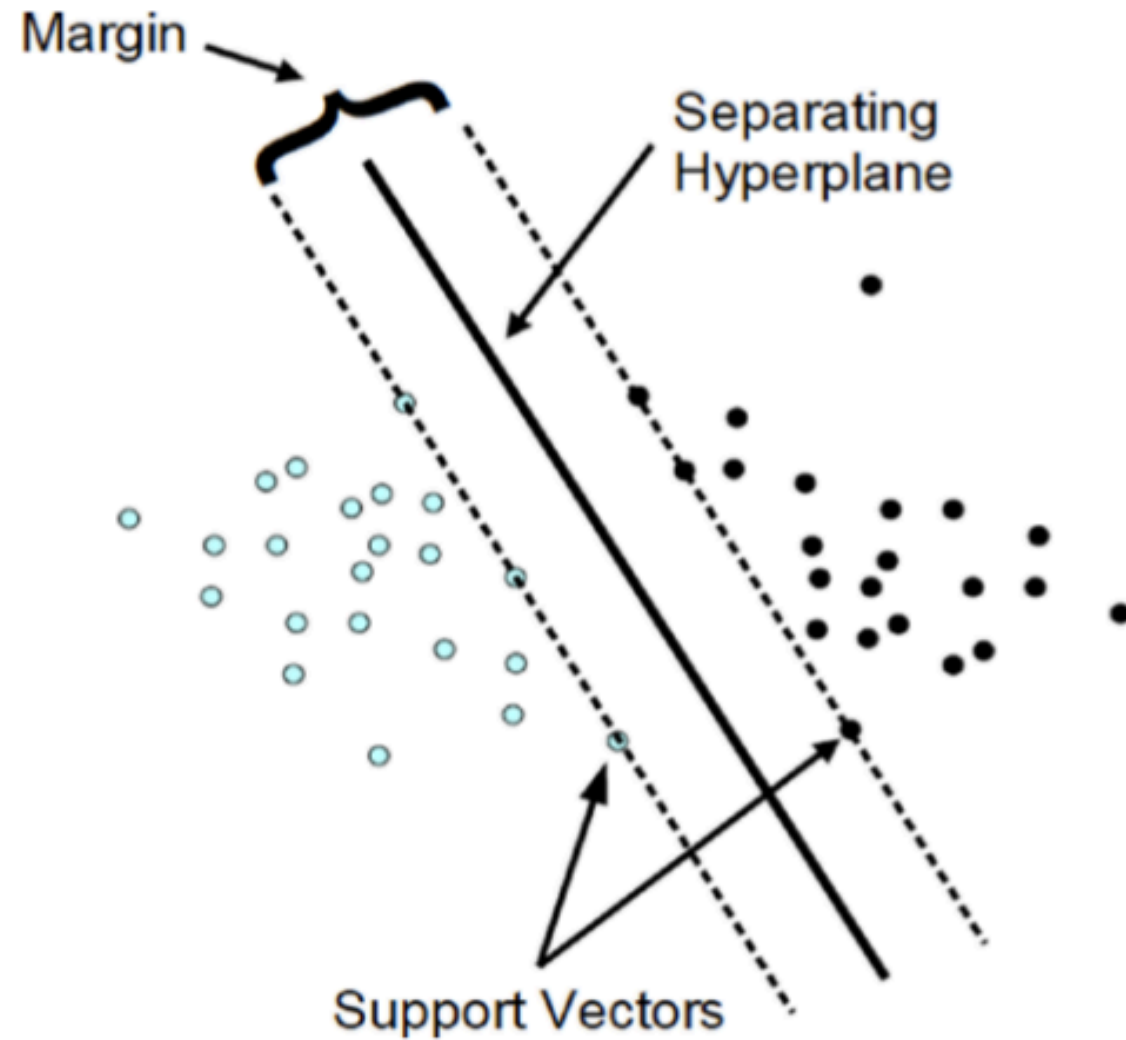
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What are Support Vector Machines?

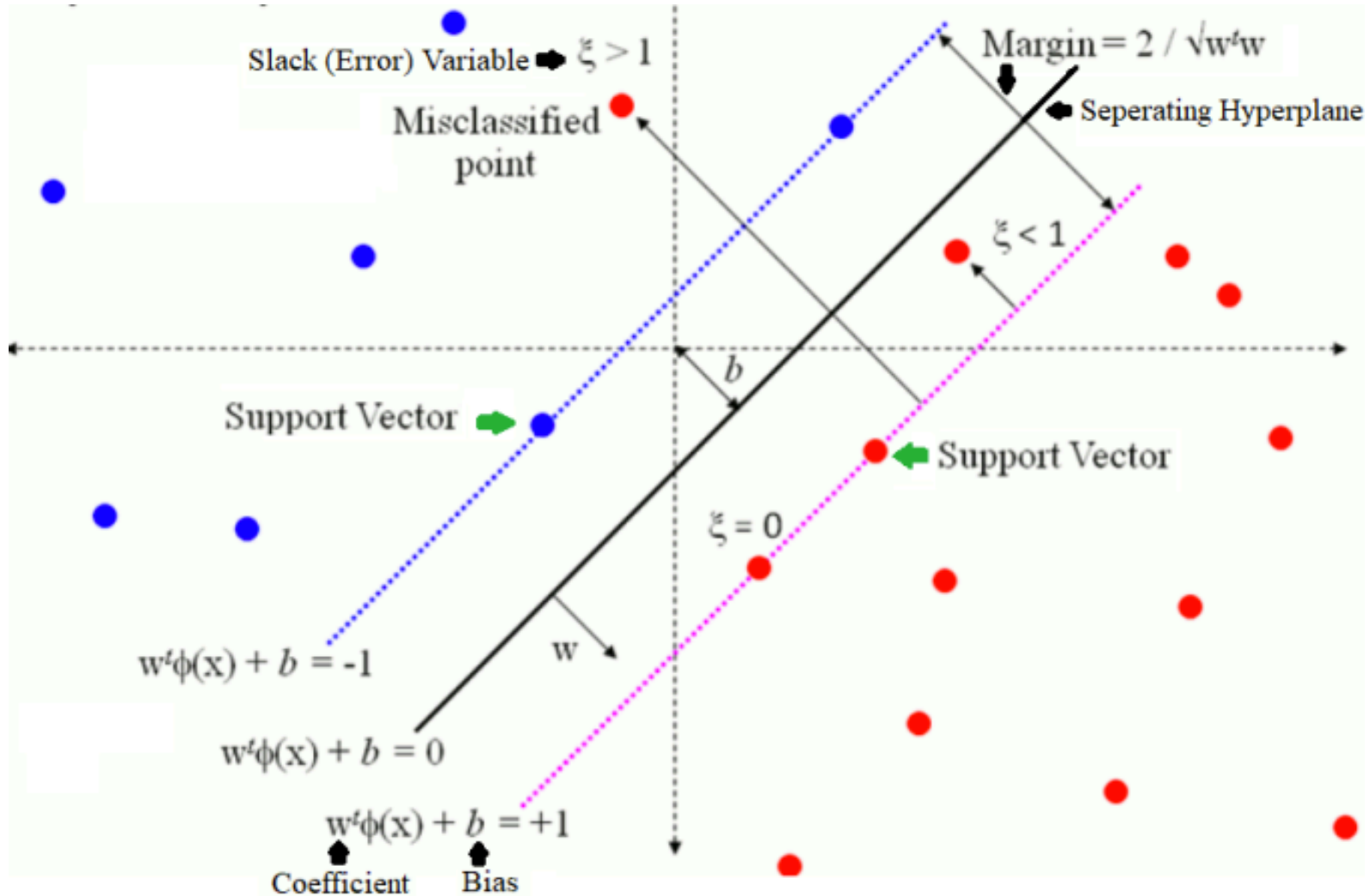
- A supervised machine learning model that analyzes data used for **classification** and **regression** problems.



“Hard Margin” SVM



“Soft Margin” SVM

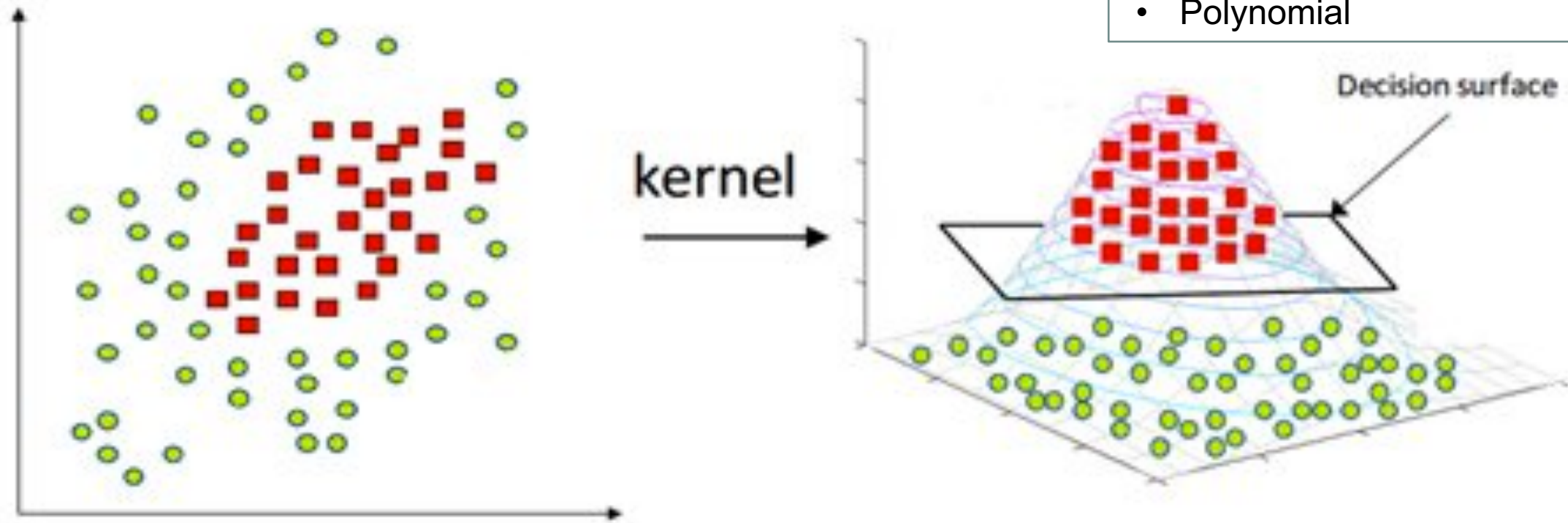


The Power of the Kernel

“Kernel Trick” – the process of transforming features into higher dimensions.

Types of kernels:

- Linear
- RBF
- Polynomial



Pros, Cons and Application of SVMs

Pros

- Exceptional performance (historically widely used)
- Robust to outliers
- Effective in high-dimensional data
- Can work with non-linear boundaries
- Fast to compute with most datasets (kernel trick)
- Low risk of overfitting

Cons

- Black box method
- Can be slow on large datasets

Applications

- Text categorization
- Classification of Images
- Handwriting recognition

