

Handout 10: Multi-class classification (DRAFT)

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Aim. To introduce the Support Vector Machines as a procedure. Motivation, set-up, description, computation, and implementation. We focus on the classical treatment.

Reading list & references:

- (1) Shalev-Shwartz, S., & Ben-David, S. (2014). Understanding machine learning: From theory to algorithms. Cambridge university press.
 - Ch. 17 (pp. 190-198)
- (2) Bishop, C. M. (2006). Pattern recognition and machine learning (Vol. 4, No. 4, p. 738). New York: Springer.
 - Ch. 7.1 Sparse Kernel Machines/Maximum marginal classifiers
- (3) Vapnik, V. (2013). The nature of statistical learning theory. Springer science & business media.
- (4) Boyd, S. P., & Vandenberghe, L. (2004). Convex optimization. Cambridge university press.
- (5) Strang, G. (2019). Linear algebra and learning from data. Wellesley-Cambridge Press.