# techniques to discuss

* neural networks
* support vector machines
* linear regression
* random forests
* clustering (see [clustering](#clustering))

# notations & concepts

* the basic *n*, *x*, *y*, *m* = number of training examples
* *h* as the learning output, the hypothesis --
* *features* -- feature engineering ...

# clustering

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* Murtagh, F. (1985). “Multidimensional Clustering Algorithms”, in
* *COMPSTAT Lectures 4*. Wuerzburg: Physica-Verlag (for algorithmic- details of algorithms used).-
* McQuitty, L.L. (1966). Similarity Analysis by Reciprocal Pairs for Discrete and Continuous Data. *Educational and Psychological- Measurement*, *26*, 825-831.
* Kaufman, L. and Rousseeuw, P.J. (1990). Finding Groups in Data: An Introduction to Cluster Analysis. Wiley, New York.

This from the ?kmeans in R

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* Hartigan, J. A. and Wong, M. A. (1979). A K-means clustering algorithm. Applied Statistics 28, 100–108.
* Lloyd, S. P. (1957, 1982) Least squares quantization in PCM. Technical Note, Bell Laboratories. Published - in 1982 in IEEE Transactions on Information Theory 28, 128–137. -MacQueen, J. (1967) Some methods for classification and analysis of multivariate observations. In Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics and Probability, eds L. M. Le Cam & J- . Neyman, 1, pp. 281–297. Berkeley, CA: University of California Press.
* K-means clustering is like the ‘Hello World’ of data. See Hilary Mason’s ‘An Introduction to Machine Learning with Web Data’ http://shop.oreilly.com/product/0636920017493.do?green=495A8BDC-FF5A-586B-074C-D3C9A9F0A4E5&cmp=af-mybuy-0636920017493.IP