Mathematical Foundations
Reading List

Compiled by Edoardo Costantini

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Introductory Books

Conversano, C., & Siciliano, R. (2008).
In J. Wang (Ed.), *Data warehousing and mining: Concepts, methodologies, tools, and applications: Concepts, methodologies, tools, and applications* (Vol. 3, chap. Decision Tree Induction). IGI Global.

A concise overview of tree-based methods.

Fox, J. (2009). *A mathematical primer for social statistics* (No. 159). Sage.

Provides a basic working knowledge of mathematical concepts for statistical applications. In particular, the book introduces the reader to the three pillars: matrix algebra, calculus and probability theory.

Friedman, J., Hastie, T., & Tibshirani, R. (2001). *The elements of statistical learning* (Vol. 1) (No. 10). Springer series in statistics New York.

- Chapter 9.2 provides a good introductory summary of tree based modelling methods.

Probability Distributions Papers

Arnold, B. C., Castillo, E., Sarabia, J. M., et al. (2001). Conditionally specified distributions: an introduction (with comments and a rejoinder by the authors). *Statistical Science*, *16*(3), 249–274.

Gelman, A., & Raghunathan, T. E. (2001). [conditionally specified distributions: An introduction]: Comment. *Statistical Science*, *16*(3), 268–269. Retrieved from http://www.jstor.org/stable/2676690

The authors discuss the use of conditional distributions not to approximate joint models but for the purpose of multiple imputation. This is simply a short compendium that facilitate the understanding of SRMI/FCS Multiple Imputation for someone coming from a more traditional Bayesian background.

Bayesian Papers

Gelman, A., & Speed, T. (1993). Characterizing a joint probability distribution by conditionals. *Journal of the Royal Statistical Society: Series B (Methodological)*, *55*(1), 185–188.

A clarification on the conditions under which a set of conditional (and marginal) distributions uniquely specifies a joint distribution.

Kyung, M., Gill, J., Ghosh, M., Casella, G., et al. (2010). Penalized regression, standard errors, and bayesian lassos. *Bayesian Analysis*, *5*(2), 369–411.

A comprehensive description of the Bayesian lasso and its frequentiests counterparts.