

APPROXIMATE EXCHANGEABILITY AND deFINETTI PRIORS IN 2021

Persi Diaconis,

Mary V. Sunseri Professor of Statistics and Professor of Mathematics,
Department of Statistics, Sequoia Hall
390 Jane Stanford Way, Stanford University
Stanford, CA 94305-4020, USA

Abstract

In a little known work, deFinetti introduced notions of partial and almost exchangeability to deal with natural real world problems. This was to capture things that allow covariates to matter but also allow ways of saying 'they probably don't' so that a lot of evidence would be required. Think differences between men and women affecting lung cancer rates. In joint work with Sergio Bacallado and Susan Holmes we attempt to bring deFinetti's into the 21st century incorporating tools from algebraic statistics to specify deFinetti priors for log linear models and current MCMC techniques for computing posteriors. There are many opportunities for careful mathematical work in this project and I will highlight recent efforts of Gerencser and Ottolini to get rates of convergence in the posterior computations.