

## **The tilted Beta process**

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The Beta process has become a popular and versatile component in several types of Bayesian nonparametrics modeling, notably in survival and event history analysis (qua prior for cumulative hazard rates) and for some hierarchical models used in machine learning (where it is the de Finetti measure for the Indian Buffet Process). In this talk I present a certain natural extension of the Beta process, called the gamma-tilted Beta process. It can be defined or characterised from different perspectives, the perhaps simplest of which is via probabilistic limits of partial sum processes where the terms take the form  $B_i^\gamma$ , for a tilting parameter  $\gamma$ , rather than merely  $B_i$ ; here these  $B_i$  are Beta distributed with small means. I demonstrate that this leads to a well-defined process and investigate some of its properties, for example when used as a prior for cumulative hazard rates in event history analysis.