

Final Project

STAT 447

2024-04-09

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Introduction and Review:

Before we discuss Dirichlet Processes, some fundamental groundwork in probability measure theory will be established. We will briefly recap the concepts of σ -algebra, probability measures and Dirichlet Distributions. We will take slightly more relaxed definitions than can be found in formal measure theory works such as (billingsley2012probability?).

A σ -algebra \mathcal{F} is a set satisfying the following three key properties:

1. The entire sample space \mathcal{X} is in \mathcal{F}
2. For all sets $A \in \mathcal{F}$, the complement $A^c \in \mathcal{F}$. This property is referred to as
3. h j k l

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$$\forall i \in I, A_i \in \mathcal{F} \implies \bigcup_{i \in I} A_i$$

(Teh 2006)

Sources

Teh, Yee Whye. 2006. “Dirichlet Process.” Course Notes for Gatsby Computational Neuroscience Unit Tutorial. <https://mlg.eng.cam.ac.uk/zoubin/tut06/ywt.pdf>.