

# BAYESIAN INFERENCE – UPDATING BELIEFS WITH EVIDENCE!

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## ABSTRACT

Bayesian inference is a part of statistics where we combine prior knowledge and observations to update our beliefs. Using this philosophy, we can create a quite rigorous and beautiful version of statistics without relying on a bunch of ill-motivated tricks and confusing measures.

The course will contain three lectures:

1. A fast paced (!!!) crash course of probability theory, covering everything up to multivariate distribution functions of stochastic variables and operations on these.
2. Bayesian inference using the prior distribution, and updating it to a posterior distribution.
3. Applying our new knowledge (the posterior distribution) to elegantly solve all manners of statistical questions.

Prerequisites: Basic calculus

Optional prerequisites: Multivariate integration, Basic set theory