

# Bayesian Deep Learning and a Probabilistic Perspective of Generalization

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## 1 Introduction

- I found this paper from Andrew Gordon Wilson's twitter account (@andrewgwils) and the tweet/summary is available here
- This is another paper following the recent discussion around Bayesian Deep Learning, and I only decided to read this for fun!

## 2 Paper Introduction

- Parameter count is a poor indicator of generalization ability.
- Generalization depends on:
  - Support
  - Inductive biases of a model

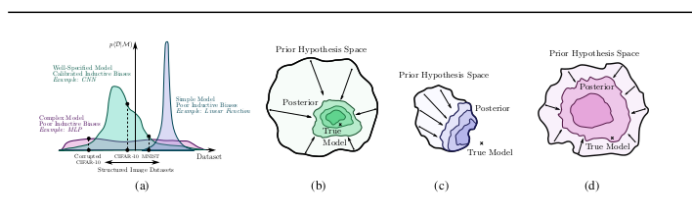


Figure 1: Probabilistic Perspective on Generalization

- For the given evidence(marginal likelihood), we have:  $p(D|M) = \int p(D|M, w)p(w)dw$
- *Support* is:  $p(D|M) \neq 0$
- *Inductive Biases*: Relative prior probabilities of different datasets i.e distribution of support given by  $p(D|M)$