

## 8. What Uncertainties Do We Need in Bayesian Deep Learning for Computer Vision?

LLM summary unavailable; providing heuristic synthesis instead. (Gemini REST error:  
{"error": {"code": 400, "message": "\* GenerateContentRequest.safety\_settings[2]: element predicate failed: \$.category in (HarmCategory.HARM\_CATEGORY\_HATE\_SPEECH, HarmCategory.HARM\_CATEGORY\_SEXUALLY\_EXPLICIT, HarmCategory.HARM\_CATEGORY\_DANGEROUS\_CONTENT, HarmCategory.HARM\_CATEGORY\_HA... HarmCategory.HARM\_CATEGORY\_CIVIC\_INTEGRITY)\n\* GenerateContentRequest.safety\_settings[3]: element predicate failed: \$.category in (HarmCategory.HARM\_CATEGORY\_HATE\_SPEECH, HarmCategory.HARM\_CATEGORY\_SEXUALLY\_EXPLICIT, HarmCategory.HARM\_CATEGORY\_DANGEROUS\_CONTENT, HarmCategory.HARM\_CATEGORY\_HA... HarmCategory.HARM\_CATEGORY\_CIVIC\_INTEGRITY)\n", "status": "INVALID\_ARGUMENT"}})

1. PyTorch: An Imperative Style, High-Performance Deep Learning Library (2022) à Deep learning frameworks have often focused on either usability or speed, but not both. PyTorch is a machine learning library that shows that these two goals are in fact compatible: it provides an imperative and Pythonic programming style that supports code as a model, makes d...
  2. nnU-Net: a self-configuring method for deep learning-based biomedical image segmentation (2020) à nnU-Net: a self-configuring method for deep learning-based biomedical image segmentation
  3. Review of deep learning: concepts, CNN architectures, challenges, applications, future directions (2021) à Abstract In the last few years, the deep learning (DL) computing paradigm has been deemed the Gold Standard in the machine learning (ML) community. Moreover, it has gradually become the most widely used computational approach in the field of ML, thus achieving outstanding resu...
  4. Machine learning and deep learning (2021) à Machine learning and deep learning
  5. Deep Learning for Anomaly Detection (2021) à Anomaly detection, a.k.a. outlier detection or novelty detection, has been a lasting yet active research area in various research communities for several decades. There are still some unique problem complexities and challenges that require advanced approaches. In recent years,...
  6. Ensemble deep learning: A review (2022) à Ensemble deep learning: A review
  7. A Deep Learning Approach to Antibiotic Discovery (2020) à A Deep Learning Approach to Antibiotic Discovery
  8. What Uncertainties Do We Need in Bayesian Deep Learning for Computer Vision? (2022) à There are two major types of uncertainty one can model. Aleatoric uncertainty captures noise inherent in the observations. On the other hand, epistemic uncertainty accounts for uncertainty in the model -- uncertainty which can be explained away given enough data. Traditionally...
- Focus aspect: deep learning and give me a summary.  
Use these bullets until the full AI summary becomes available.

### References:

1. PyTorch: An Imperative Style, High-Performance Deep Learning Library
2. nnU-Net: a self-configuring method for deep learning-based biomedical image segmentation
3. Review of deep learning: concepts, CNN architectures, challenges, applications, future directions
4. Machine learning and deep learning
5. Deep Learning for Anomaly Detection
6. Ensemble deep learning: A review
7. A Deep Learning Approach to Antibiotic Discovery