cases	doc_1		doc_2		decision	id
		 Raanan Y. Yehezkel Rohekar Yaniv Gurwicz Shami Nisimov Gal Novik 	authors	Raanan Y. Rohekar Yaniv Gurwicz Shami Nisimov Gal Novik		
	authors		title	Modeling Uncertainty by Learning a Hierarchy of Deep Neural Connections		
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	ur is			Modeling uncertainty in deep neural networks, despite recent important advances, is still an open problem. Bayesian neural networks are a powerful solution, where the prior		
	id	id-5314962511265059257	abstract	over network weights is a design choice, often a normal distribution or other distribution encouraging sparsity. However, this prior is agnostic to the generative process of the input data, which might lead to unwarranted generalization for out-of-distribution tested data. We suggest the presence of a confounder for the relation between the input data and the discriminative function given the target label. We propose an approach for modeling this confounder by sharing neural connectivity patterns between the generative and discriminative networks. This approach leads to a new deep architecture, where networks are sampled from the posterior of local causal structures, and coupled into a compact hierarchy. We demonstrate that sampling networks from this hierarchy, proportionally to their posterior, is efficient and enables estimating various types of uncertainties. Empirical evaluations of our method demonstrate significant improvement compared to state-of-the-art calibration and out-of-distribution detection methods.		
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