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# STRUCTURES JOUR FIXE

**Holger Fröning**

Ziti, HEIDELBERG UNIVERSITY



**On Accelerating Deep and Bayesian Neural  
Architectures**

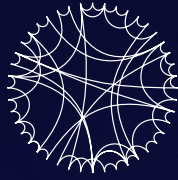
Pretalk starts at 1:00 pm by Guido Kanschat

**November 03, 2023, 1:30 PM, Phil 12 GHs**

COFFEE & SNACKS IN ROOM 106

ZOOM: Meeting ID: 935 6549 3662, Code: 928036

CONTACT: [office@structures.uni-heidelberg.de](mailto:office@structures.uni-heidelberg.de)



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# ABSTRACT

Deep artificial neural networks are a prominent approach for decision-making in scenarios involving uncertainty. These networks have significantly enhanced performance in various prediction tasks, such as image recognition, speech processing, and signal analysis. However, their utilization demands substantial computational resources and memory. On the other hand, there is a growing need to implement machine learning techniques on resource-constrained devices, including Internet of Things (IoT) devices, edge devices, and mobile platforms. In this talk, we will start by examining prior research focused on accelerating Deep Neural Networks (DNNs) through compression techniques, particularly quantization, pruning, and architecture optimization. While DNNs excel at operating under uncertainty, they are incapable of reasoning about uncertainty itself. Detecting situations where a neural architecture cannot provide a well-founded prediction is crucial. Consequently, probabilistic models have recently garnered significant interest. We will provide a brief overview of these models and discuss potential avenues to address their substantially increased computational demands.

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