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the PhD's pitch

Our PhD members explain to students, collegues and professors...

DETAILS

Politecnico di Torino - Maxwell Room
4th March 2024 - 5.00 PM

Estimating the reliability of DNNs in the face of permanent GPU hardware failures

Mr. Juan Balaguera, PhD Candidate, DAUIN.

Graphic Processing Units (GPUs) are crucial for modern Deep Neural Network (DNN) acceleration. However, these devices can be affected by faults that might jeopardize the DNNs' realiability. My research proposes fault simulation strategies to effectively assess the impact of permanent defects on GPUs regardless of the software implementation of the neural networks

Functional Stimuli Generation for Burn-In Test

Mr. Nick Deligiannis, PhD Candidate, DAUIN.

In high-reliability applications, Burn-In testing (BI) is crucial to combat early failures. Traditional static BI is inefficient for modern dense circuits. In this work, we propose automated methods able to generate effective, functional stress inducing stimuli, especially for pipelined processors, destined for dynamic BI test.

Reliability and Performance Challenges of Next-Generation Smart Power Battery Management Systems for Electric Mobility

Mr. Amirhossein Ahmadi, PhD Candidate, DET.

This project discusses the impact of electromagnetic interference (EMI) on the battery management systems (BMS) and BMS vertical interface (VIF). The susceptibility to EMI is tackeld by transistor-level simulations and tests for the first time aiming to highlight the failure mechanisms and consequently to propose methods to enhance the performance.

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