



# HW ACCELERATED MACHINE LEARNING AT THE EDGE

## ON-LINE CLASS on MS TEAMS

**JANUARY 16-27, 2023**

<b>WEEK 1</b>		<b>JANUARY 16-20</b>			
<b>WEEK 2</b>		<b>JANUARY 23-27</b>			
<b>DAILY</b>		Central European Time	Eastern Standard Time	Pacific Standard Time	India Standard Time
		CET (Lausanne)	EST (New York)	PST (California)	IST (India)
Module 1		4:00-5:30 pm	10:00-11:30 am	7:00-8:30 am	8:30-10:00 pm
Module 2		6:00-7:30 pm	12:00 am -1:30 pm	9:00-10:30 am	10:30 pm -12:00 am
<b>WEEK 1</b>	Module				
Monday, January 16	1	<b>Context:</b> ML Applications, Scenario's and Constraints for the Edge			Marian Verhelst, KU Leuven
	2	<b>Context:</b> ML Algorithms and Resulting Challenges			
Tuesday, January 17	1	<b>Algorithms:</b> Neural Network Compression for the Edge			Tijmen Blankevoort, Qualcomm
	2	<b>Algorithms:</b> Neural Network Quantization for the Edge			
Wednesday, January 18	1	<b>HW, CPU:</b> Specializing Processors for ML			Luca Benini, EPFL/Uni Bolgna
	2	<b>HW, CPU:</b> From Single to Multi-Core Low-Power SoCs for ML			
Thursday, January 19	1	<b>HW, Digital:</b> Concepts Towards ML Acceleration			Marian Verhelst, KU Leuven
	2	<b>HW, Digital:</b> Exploiting Quantization and Sparsity at the HW Level			
Friday, January 20	1	<b>HW, Analog:</b> Analog/Mixed-Signal Acceleration			Naveen Verma, Princeton
	2	<b>HW, Tech:</b> Architectural Integration of Emerging Compute Models and Technologies			
<b>WEEK 2</b>	Module				
Monday, January 23	1	<b>Tools:</b> Model-centric TinyML			Vijay Janapa Reddi, Harvard
	2	<b>Tools:</b> Data-centric TinyML			
Tuesday, January 24	1	<b>Tools:</b> Landscape of DL Compilers and Challenges for Inference			Prasanth Chatarasi, IBM, & Tushar Krisna, Georgia Tech
	2	<b>Tools:</b> Mapping and HW Co-optimization			
Wednesday, January 25	1	<b>System:</b> Efficient Execution of Approximated AI Algorithms on Heterogeneous Edge AI Systems			David Atienza, EPFL
	2	<b>Use Cases:</b> Application-Driven System Design and Optimization flow of Edge AI Use Cases in Industrial and Medical Domains			
Thursday, January 26	1	<b>Emerging ML Paradigms:</b> Neuro-Inspired Computing			Jan Rabaey UC Berkeley
	2	<b>Emerging ML Paradigms:</b> Towards Cognitive Systems			
Friday, January 27	1	<b>Practical Use Cases:</b> Energy Efficient ML Applications for Metaverse			Huichu Liu, Facebook Eduard Alarcon, UPC
	2	Panel Discussion			