

## Schedule Intelligent Architectures (Tentative)

5LIL0

Q3 2021-2022

Lectures: Tue 3,4 & Fri 7,8

Nr	Date	Day	Lecturer(s)	Topic(s)
1	Feb 8	Tuesday	Henk Corporaal Berk Ulker	Overview Lecture \- Introduction to ML and CNNs <b>Lab 1 Introduction: ANN design; deadline Feb 25</b>
2	Feb 11	Friday	Berk Ulker Henk Corporaal	Learning principles
3	Feb 15	Tuesday	Berk Ulker	Learning principles, continued NW design and Frameworks
4	Feb 18	Friday	Maurice Peemen (ThermoFisher)	Optimizations 1: Compact aware NW design Making the NW cheaper: Filter Decomposition & Pruning
5	Feb 22	Tuesday	Floran de Putter Wei Sun	Optimizations 2: Making the calculations and storage cheaper \- ANN Quantization <b>Lab 2 Introduction: GPU mapping; deadline Mar 22</b>
6	Feb 25	Friday	Henk Corporaal Wei Sun	GPU architecture and CUDA programming
BREAK				
7	Mar 8	Tuesday	Henk Corporaal	Optimizations 3: Exploiting data reuse by scheduling and buffering \- Advanced loop transformations + Intro Halide
8	Mar 11	Friday	Sebastian Vogel (NXP) Floran de Putter	Optimization 2, Quantization cont'd, including Extreme Quantization: BNNs & TNNs
9	Mar 15	Tuesday	Alexios Balatsoukas	Advanced DNNs DNN applications
10	Mar 18	Friday	Kanishkan Vadivel Henk Corporaal	Accelerators for ANNs <b>Lab 3 Introduction: ASIP mapping; deadline Apr 8</b>
11	Mar 22	Tuesday	Orlando Moreira (GML) Kanishkan Vadivel	Accelerators, cont'd General Purpose Architectures with ANN support
12	Mar 25	Friday	Willem Sanberg (NXP) Floran de Putter	NAS: network architecture search TimeLoops and ZigZag
13	Mar 29	Tuesday	Sherif Eissa Federico Corradi	Beyond ANNs \- Spiking Neural Networks (SNNs) and SNN architectures
14	Apr 1	Friday	Martin Villescas & Patrick Wijnings	Beyond ANNs \- Bayesian learning, architectures, and its relation to ANNs
15	Apr 5	Tuesday	Federico Corradi Henk Corporaal	Neuromorphic architectures for edge AI Recap + Q&A
16	Apr 8	Friday	Henk Corporaal	Recap + Q&A