

Morpheus 2024

ESA workshop on Edge AI and Neuromorphic Hardware Accelerators

1st edition, 6th and 7th of May
ESTEC, Netherlands

Preliminary agenda

Abstract:

From the emerging needs identified by ESA and Satellites Primes, the workshop as a main goal, will focus on establishing the contour of a future AI accelerator and define the associated roadmap. By gathering Satellites Primes, IP providers, Researchers and other key players, the workshop also aims at leveraging interest and creating synergies in Europe and beyond.

Point of contact for more information

Laurent Hili

*Microelectronics and Data Handling engineer
Electric Engineering Department (TEC-E)
Data Handling Section (TEC-EDD)*

*E-Mail Address: Laurent.hili@esa.int
Mobile: +31 (0) 6 8109 4332*



Monday the 6th of May

09:00 – 09:30 ESA welcome and introduction

Session 1: Use cases and future missions needs

09:30 – 10:00 **ESA**, Emergent and distant needs for Edge AI computing

10:00 – 10:30 **Airbus Defence & Space**

10:30 – 10:45 *Coffee break*

10:45 – 11:15 **Thales Alenia Space**

11:15 – 11:30 Session-1 wrap-up

Session 2: Introduction to Edge AI and Neuromorphic Hardware Acceleration

11:30 – 12:00 **KU Leuven**, Overview of HW acceleration for AI applications

12:00 – 12:30 **Open Neuromorphic**, Overview of HW acceleration for Neuromorphic applications

12:30 – 13:40 *Lunch break*

Session 3: Artificial Neural Network (ANN) accelerators

13:40 – 14:00 **Magics Technologies**

14:00 – 14:20 **Untether AI**

14:20 – 14:40 **IngeniArs**

Session 4: Spiking Neural Network (SNN) accelerators

14:40 – 15:00 **BrainChip**

15:00 – 15:20 **Innatera**

15:20 – 15:40 Session-3 & 4 wrap-ups

Session 5: Research activities and evolutions in AI hardware acceleration

15:40 – 16:00 **EPFL**

16:00 – 16:20 **IMEC**

16:20 – 16:50 *Coffee break*

16:50 – 17:10 **University of Manchester / TU Dresden**

17:10 – 17:30 **CEA-Leti**

17:30 – 17:50 **IRT Saint Exupery**

17:50 – 18:10 **University of Bologna**

18:10 – 18:30 **University of Pisa**

18:30 – 18:50 Day wrap-up

18:50 – 20:00 *Cocktail*

Tuesday the 7th of May

09:15 – 09:30 ESA welcome

Session 6: Space grade System on Chip developments

09:30 – 09:50 **FrontGrade Gaisler**

09:50 – 10:10 **NanoXplore**

10:10 – 10:30 **ISD**

10:30 – 10:50 *Coffee Break*

Session 7: AI compute systems for Space

10:50 – 11:10 **Ramon Space**

11:10 – 11:30 **EDGX**

11:30 – 11:50 **KP Labs**

11:50 – 12:10 **Neurobus**

12:10 – 12:30 **Ubotica Technologies**

12:30 – 13:40 *Lunch Break*

Session 8: Software frameworks and benchmarks

13:40 – 14:00 **ESA**, ECSS-E-HB-40-02A DIR1 “Space engineering - Machine learning” handbook

14:00 – 14:20 **ESA**, Presentation of OBPMark & OBPMark-ML

14:20 – 14:40 **AIKO**

14:40 – 15:00 **Klepsydra**

15:00 – 15:20 **MathWorks**

15:20 – 15:40 **Tata Consultancy Services**

Session 9: Workshop Wrap-up

15:40 – 16:10 **ESA**, Summary of the workshop and future steps

16:10 – 16:30 **ESA**, Support schemes

16:30 – 16:40 *End of the workshop*