



IEEE 4th International Conference on Computing and Machine
Intelligence
April 05-06, 2025
Central Michigan University

CERTIFICATE of Participation

This certificate is presented to
Murat Isik

**For participating and presenting the
paper titled:**

**Neuromorphic Circuits with Spiking Astrocytes for
Increased Energy Efficiency, Fault Tolerance, and
Memory Capacitance**

A handwritten signature in blue ink, appearing to read "Ah", located above the name of the General Chair.

General Chair
Ahmed Abdelgawad, PhD