



IEEE 4th International Conference on Computing and Machine
Intelligence
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Central Michigan University

CERTIFICATE of Participation

This certificate is presented to
Laith Jumma

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

**Design and Performance Analysis of Ultra-Long-
Haul DWDM RFoF Systems Using EDFA and
Raman Amplifiers under Variable Launched Power**

Tawale

A handwritten signature in blue ink, appearing to be "Ah".

General Chair
Ahmed Abdelgawad, PhD