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Photonic Neural Networks

Guest Editor:

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Deadline for manuscript submissions:
closed (15 February 2022)

Message from the Guest Editor

Dear Colleagues,

Artificial neural networks (ANNs) are recognized for their enormous potential across many scientific disciplines and economic sectors. Over the years, photonic computing studies and products have demonstrated a clear advantage in communication and processing speed over their electronic rivals due to the inherent parallelism of the bosonic nature of light. Furthermore, many linear and non-linear transformations were demonstrated using passive optical components, meta devices, and active photonic components. To further advance the field of photonic neural networks (PNN), we encourage you to submit your work to this Special Issue. Original research papers or review articles providing insights into the state-of-the-art and future of the field are welcome. This Special Issue focuses on:

(a) Photonic integrated circuit architectures for matrix multiplications,

(b) Photonic neuromorphic computing,

(c) Reservoir computing,

(d) Device components for implementing nonlinear functions in photonic neural networks, and

(e) Application opportunities for photonic neural networks.

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Special Issue