



## Optical Computing and Optical Neural Networks

Guest Editors:

**Dr. Bin Shi**

Eindhoven Hendrik Casimir  
Institute, Eindhoven University of  
Technology, 5600 MB Eindhoven,  
The Netherlands

**Dr. Apostolos Tsakyridis**

Department of Informatics,  
Aristotle University of  
Thessaloniki, Thessaloniki,  
Greece

**Dr. Miltiadis Moralis-Pegios**

Photonic Systems and Networks  
Group, Aristotle University of  
Thessaloniki, Thessaloniki,  
Greece

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### Message from the Guest Editors

The current exponentially growing data volume demands computing power that grows apace. Artificial intelligence based on neural networks has achieved great success in solving complex problems involving the processing of huge amounts of data. Optical and photonic neural networks are alternative solutions to electronics, exploiting the high parallelisms from the nature of light to enhance the computing speed and power efficiency with parallel computing. The study of optical neural networks is important to the exploration of the related methods, designs, systems, and training algorithms to improve the performance when solving complex problems. Optical neural networks are an essential part of optical computing, and potentially provide solutions in low-latency and real time data processing. This Special Issue aims to present the recent advanced research in optical neural networks with different schemes within the topic of non-von Neumann computing. The implementations can be in free-space, fiber-optics, and photonic integrated circuits.

