Advancing Photonics with Machine Learning

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Discovering unconventional optical designs via machine-learning promises to advance on-chip circuitry, imaging, sensing, energy, and quantum information technology. In this talk, photonic design approaches and emerging material platforms will be discussed showcasting machine-learning-assisted topology optimization for thermophotovoltaic metasurface designs as well as machine learning algorithms for speeding-up quantum measurements and quantum device integration and prototyping.