

A Review on Impact of AI on VLSI

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Abstract: *The rapid evolution of semiconductor technology has made Very Large-Scale Integration (VLSI) design increasingly complex. Artificial Intelligence (AI) has emerged as a transformative solution for automating and optimizing critical design stages such as synthesis, placement, routing, verification, and testing. By incorporating techniques from machine learning (ML), deep learning (DL), and reinforcement learning (RL), AI enables faster design convergence, improved performance–power–area (PPA) trade-offs, and cost reduction. This paper reviews the key roles, benefits, challenges, and future directions of AI applications in the VLSI design flow.*

Keywords: Artificial Intelligence, Very Large Scale Integration

