

A Learning based distributed routing algorithm for constraint-driven placement

Routing is the process of wiring components on Printed Circuit Boards (PCBs) or cells in Integrated Circuit (IC) layouts. In a typical Electronic Design Automation (EDA) flow, routing typically is considered after placement. However, in dense designs, it is often factored in the preceding stages of the whole flow. It is the most time-consuming of the layout process that becomes increasingly challenging when factoring in technical constraints. In this project, we will explore scalable and parallelisable learning-based strategies for routing circuits and afterwards co-optimize circuit layouts together with placement. This is potentially a very hard problem.

The digital era is built with ICs on PCBs, their design process is notoriously time-consuming and expertise intensive, thus automating the design process has strong practical implications.

Pre-requisites: A strong background in computer science and a very good understanding of reinforcement learning. A good background in Python programming.

Student Interests: Electronics, VLSI. Electronic Design Automation (EDA).

Contact

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