Yunbo Hou

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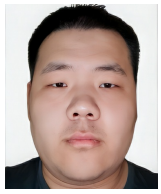

EDUCATION

Peking University Sep 2023 - Jun 2026

Computer Science Master School of Software and Microelectronics

GPA: 3.80

University of Electronic Science and Technology of China Sep 2019 - Jun 2023

Artificial Intelligence Bachelor School of Computer Science and Technology

GPA: **3.99**(**1/65**), CET-4: 557, CET-6: 535

PROFESSIONAL EXPERIENCE

KDD 2024: RoutePlacer: An End-to-End Routability-Aware Placer with Graph Neural Network(First author)

- We propose RoutePlacer to enable end-to-end routability optimization and improve two-stage placers in a plug-and-play manner.
- We introduce RouteGNN to learn accurate routability estimations conditional on RouteGraph, an efficient heterogeneous graph structure with topological and geometrical features.
- We present a Differentiable Geometrical Feature Computation to enable gradient-based optimization.
- We evaluate RoutePlacer on DAC2012 and ISPD2011 benchmarks, based on DREAMPlace, an open-source EDA framework. RoutePlacer achieves a 16% reduction in Total Overflow while maintaining routed wirelength compared to prior state-of-the-art (SOTA). Integrating RouteGNN within two-stage placers leads to a 44% reduction in Total Overflow without compromising wirelength. They show the SOTA performance and extensibility of RoutePlacer.

Circuit Global Placement Generalization via Graph Neural Network(KDD 2025 in submission)

- We introduce TransPlace, the first learning-based framework for large-scale global placement.
- We propose a series of techniques—Netlist Graph modeling, Cell-flow, TPGNN, and a two-stage strategy—to enable and enhance large-scale inductive placement.
- We comprehensively evaluate TransPlace across four standard benchmarks, demonstrating that TransPlace can surpass state-of-the-art global placers with a 1.2x speedup, 30% less congestion, 9% better timing, and 5% shorter wirelength.

AWARD EXPERIENCE

- Outstanding Undergraduate Thesis Award from University of Electronic Science and Technology of China
- Blue Bridge Cup National Software and Information Technology Professional Talent Competition National Second Prize
- Second Prize of Sichuan Province in the National College Student Mathematical Modeling Competition
- Meritorious Award in the American College Student Mathematical Modeling Competition

SKILLS LIST

Programming Languages: C++, Python

Deep Learning: skilled in deep learning frameworks such as PyTorch, Deep Graph Library(DGL), familiar with classical graph neural network architecture such as GCN, GraphSAGE, GIN, GAT