Sungyoung Lee

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Objective

I am a first-year Ph.D. student at the University of Texas at Austin, focusing on advancing Integrated Circuit (IC) design. My primary goals are to (1) minimize the time required for IC design and (2) generate novel IC topologies. I have identified significant opportunities in leveraging Graph Machine Learning to address both objectives effectively.

Research Interest

- Self-Supervised **Graph Representation Learning**
- Discrete Diffusion Models and Flow Matching for **Graph Generation**

Education

- **The University of Texas at Austin** — *Sep 2024 - Current*
  Ph.D. Student, Electrical and Computer Engineering Department — Austin, USA
- **Seoul National University** — *Mar 2017 - August 2023*
  Bachelor of Science, Electrical Engineering and Computer Science (EECS), GPA: 3.95/4.30 — Seoul, South Korea
- **Hankuk Academy of Foreign Studies** — *Mar 2014 - Feb 2017*
  Secondary Education — Yongin, South Korea

Publications

C=Conference, J=Journal, P=Patent, S=In Submission, T=Thesis

[C.1] Yao Lai, **Sungyoung Lee**, Guojin Chen, Souradip Poddar, Mengkang Hu, David Z. Pan, Ping Luo. "AnalogCoder: Analog Circuit Design via Training-Free Code Generation". In *2025 39th Association for the Advancement of Artificial Intelligence (2025 AAAI)*

[C.2] Supriyo Maji, **Sungyoung Lee**, David Z Pan. "Analog Transistor Placement Optimization Considering Nonlinear Spatial Variations ". *2024 Design, Automation & Test in Europe Conference & Exhibition (2024 DATE)*

[C.3] Jung-Woo Sull, **Sungyoung Lee**, Deog-Kyoon Jeong. "A 10-to-12-GHz Dual Loop Quadrature Clock Corrector in 28-nm CMOS Technology". *2022 37th International Technical Conference on Circuits/Systems, Computers and Communications (2022 ITC-CSCC)*

Machine Learning Skills

- **Online/Offline Reinforcement Learning**: From scratch implementation of Proximal Policy Optimization (PPO), Soft Actor Critic (SAC), Conservative Q-Learning (CQL), Decision Transformer (DT), ...
- **Graph Neural Networks**: From scratch implementation of Graph Attention Networks (GAT), Graph Isomorphism Networks (GIN), Heterogeneous Graph Attention Networks (HAN), ...
- **Self-Supervised Pretraining**: From scratch implementation of Graph Contrastive Learning

Honors and Awards

- **UT Austin Engineering Fellowship** — *Sep 2024*
  ECE department at the University of Texas at Austin
- **Golden Tiger Award** — *Dec 2019*
  KATUSA Training Academy (KTA), the United States Army Garrison (USAG) Humphreys
  ◦ Given to the second best trainee at KTA, located in USAG Humphreys.