Learning to Design Analog Circuits to Meet Threshold Specifications

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1. Motivation

Human circuit design lags behind co-design processes and struggles to predict exact circuit parameters. Introducing thresholds can alleviate this issue.

2. Contribution

Data-efficient method for dataset construction The most extensive evaluation on diverse set of analog and radio circuits.

5. Filtering Phase



 $F(y; D_0) = \{(x, y') \in D_0 | \lambda y' > \lambda y\}$

Adding small perturbations

 $D_{\epsilon} = \{ (x, (1 - \epsilon \lambda u)y) | (x, y) \in D_0, u \sim U^k \text{ i.i.d} \} :$

Selecting the best available circuit

 $\bar{D}^* = \{(x, \tilde{y}) | \tilde{y} \in D_\epsilon, x = \operatorname{argmax} F(\tilde{y}; D_0) \}$







NaSpice

Initial

Dataset