



Technology for the Curious Minds

Autonomous PCB Design

Quilter combines physics-based simulations with reinforcement learning to optimize designs for manufacturability and performance by refining results through iterative improvement.

Quilter is not trained on human data to ensure Quilter remains free of human designer biases and protects your intellectual property.

Artificial Intelligence and Machine Learning

Fully Autonomous Operation

Quilter autonomously processes schematic inputs, netlists, footprints, and board outlines into production-ready, manufacturable designs without manual intervention.

Balancing What Matters

It performs multi-objective optimization during placement and routing, balancing constraints such as manufacturability, performance, and cost-efficiency.

Hundreds of Permutations Explored

Quilter's proprietary algorithms break down PCB design tasks into granular decisions, enabling iterative exploration of millions of design permutations to identify the most efficient solution.

Learns Through Reinforcement

Reinforcement Learning (RL) drives real-time adaptations, ensuring every output meets key design constraints.

No Human Bias

Quilter does not rely on static libraries or templates. It learns and improves autonomously by simulating outcomes and optimizing based on real-world physics.

Circuit Comprehension and Physics-Driven Design

Understands Critical Circuit

Physics simulations validate design compliance with manufacturability and industry standards for reliability and adherence to real-world constraints.

Validates with Physics

Quilter understands your schematics to automatically identify and prioritize critical circuit elements—bypass capacitors, differential pairs, high-current nets, and crystal oscillators—ensuring PCB designs are optimized for stability and performance.

Reinforcement Learning for PCB Design

Optimizes Every Trade-Off

Quilter's RL agents optimize component placement by exploring trade-offs between connection lengths, signal integrity, and manufacturability.

Gets Smarter Every Time

Design outputs are continuously fed back into Quilter's RL model, enabling the system to learn from errors and improve the quality of subsequent designs autonomously.

Data Privacy and Training

Your IP is Yours Alone

Quilter isolates each design as an independent job, ensuring customer IP is never reused or cross-contaminated between projects.

Physics as Training Data

Quilter's training focuses solely on physics simulations and design rule adherence, bypassing the need for pre-labeled datasets or human-generated templates.

Secure Continuous Learning

Continuous feedback-driven reinforcement learning ensures the tool evolves with every project, ensuring faster iterations and enhanced adaptability to engineering constraints without compromising data security.