

Preserving Properties via Nisan's PRG

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- Uses w bits of space to store its state

• Makes a single-pass on the uniform random string

- Updates its state according to an arbitrary state transition table ($\leq 2^w$ states)

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Indyk gave a recipe for turning a string algorithm using such PRGs

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- Nisan gave a PRG to "fool" such algorithms by replacing a fully random string with pseudorandom string generated using a **short uniform random seed**
- Indyk gave a recipe to fool turnstile streaming algorithms using such PRGs

Nisan's PRG