



# SmallSpace Algorithm

- If  $S$  has  $n$  rows, algorithm uses  $n$  "words" of space

Makes a single pass over the range and string from left to right

- Computes  $Sx$  at the end

• Using PRG that folds single-pass algorithms:

- $S_x$  computed using PRG also has the same properties

• Need to store only the "seed" to the PRG



# Small Space Algorithm

- If  $S$  has  $m$  rows, algorithm uses  $m$  "words" of space
- Makes a single pass over the random string from **left** to **right**
- Computes  $Sx$  at the end
- Using PRG that fools single-pass algorithms:
  - $Sx$  computed using PRG also has the same properties
  - Need to store only the "seed" to the PRG

# Nisan's PRG