Bounded Model Checking (BMC)

- Sacrifice completeness for quick bug-finding

- Unroll the transition system

  - Each variable $v \in V$ gets a new symbol for each time-step, e.g. v_k is v at time k

  - Space-Time duality: unrolls temporal behavior into space

- For increasing values of k, check:

  - $I(s_0) \wedge \bigwedge_{i=1}^{k} T(s_{i-1}, s_i) \wedge \neg P(s_k)$

- If it is ever SAT, return FALSE

  - Can construct a counter-example trace from the solver model