

Drunken Master (1978)

Out-Of-Order (except not literally)

- Instruction scheduling
- Registers are fake now*
 - Files, queues, writeback, ...
- Branches are fake*
 - We put a neural network in your CPU to make if statements faster (yes)

Phantom Memories

The L1i Cache (and the uOp cache, and ...)

- “Code” is “read” from “memory” and executed “in-order”
 - “Read” except for when it’s in the uOp cache
 - “Memory” except for when it’s in L1i
 - “In-order” if you’re a TV remote