

Temporal Specifications: Capturing Time in CPS

• **Always**, if an obstacle is hit, then, in the **next** step, turn left: **Linear Temporal Logic**

Always, if obstacle is hit, then, within two seconds, turn left: Metric Temporal Logic

- **Always**, if obstacle is **within 20 mm**, **within two secs**, turn left: Signal Temporal Logic

Close to natural language

Nice algorithmic properties

Popular specification language



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Temporal Logic

Linear Temporal Logic (LTL)

Propositions

p, q, r : *True or False*
(Representing system events)

Boolean Operators

\wedge (and) \vee (or) \neg (neg) \implies (implies)

Temporal Operators

