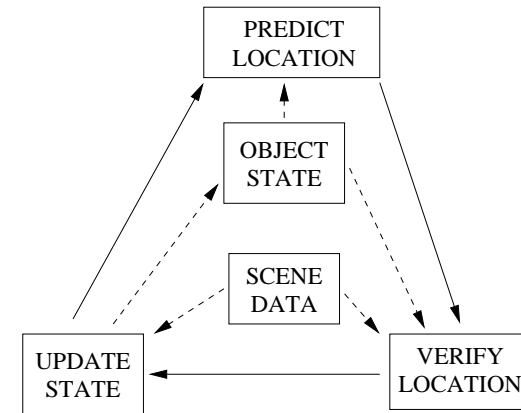


## Model-Based Tracking

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## Architecture of Model-Based Tracker



## TRACKING IN GENERAL

Can track { people, vehicles, animals } using Kalman filter or condensation tracking

- Need a motion model
- Can learn model, or from calibrated parametric model

Newton's Laws of Motion often used:

$$\vec{x}(t) = \vec{s}_0 + t\vec{v}_0 + \frac{1}{2}t^2\vec{a}$$

## BUT ....

- Still need to know what is being tracked in image
- Easy for bouncing ball scene: contrasting object, plain background
- Hard in real scenes: objects come and go, lighting changes, shadows, moving scene structure (eg. leaves), occlusions, fast objects