1984

An Object Tracking Surveillance System
Goals

- Decode and buffer NTSC signal
- Locate laser pointer within the camera’s field of view
- Track motion of laser pointer
- Identify target
- Track motion of target
NTSC Camera Interface
Memory Controller
Memory Controller Detail
VGA Output
Particle Filter

- Each particle has position, velocity, and assigned color
- Each frame
  - if a particle contains its assigned color, it lives
  - else, it is removed
- Maintain a constant number by spawning a new one whenever one is removed
- Survival of the “Fittest”
Particle Filter
Particle Master

![Diagram showing alive list and dead list with pointers to queue top, current ptr, and total ptr.](image)
Questions?