Auto-Targetting in a Remote Sentry Turret

Jacky Chang, Stephanie Paige, Eli Stickgold

- **Video Processing**

  - A feed of the camera output appears on the screen.

  - Store frames in ZBTs and create changed-pixel map through comparison of frames.

  - Show changed-pixel map overlaid on camera output

- **Motion Detection**

  - Vertical and horizontal histograms based on changed-pixel map.

  - Center of mass calculations return pixel location to target.

- **Movement**

  - In auto-target mode:

    * Camera reacts to motion.

    * Laser tracks and lights single moving body.

    * Laser tracks and lights one of multiple moving bodies.

  - In user-guided mode:

    * Laser follows mouse.

    * Laser lights real-world targets clicked on-screen.

  - With range input:

    * Laser is biased upwards a compensatory amount - small for short ranges, larger for long ranges.

- **User Interface**

– Mouse tracking and location storage.

– Select movement mode: auto-target or user-guided.

– Feedback when target is chosen through mouse click.

– Show box-of-interest on video feed.