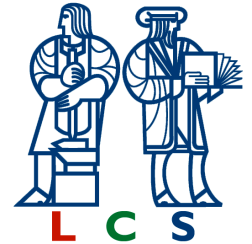


MIT2000-05 : A Multi-Cue Vision Person Tracking Module

Trevor Darrell, Hiroshi Murase

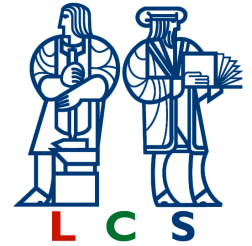


Project Overview

We are developing a robust person tracking system that uses multiple visual cues, processing modalities, and viewpoints.

Our goal is for the system to be robust to widely varying illumination conditions: (e.g., conference room with video projectors). Thus we can't use simple color background models.

Initial development efforts are focusing on color and stereo range processing modalities, for deployment as a component module in an intelligent environment tracking system.



Progress Through June 2001

1. New fast foreground detection algorithm:



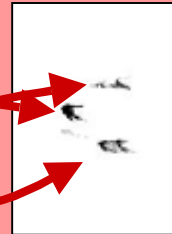
Intensity



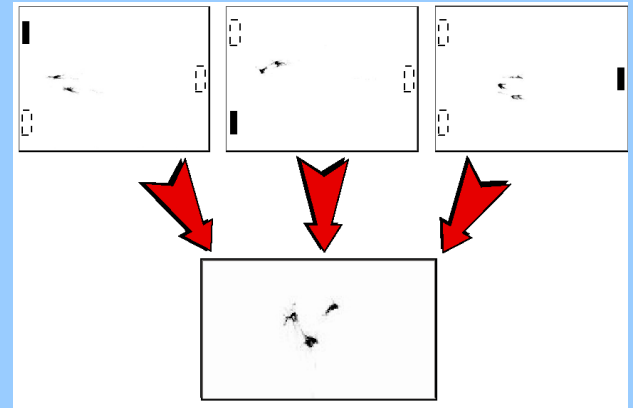
Range



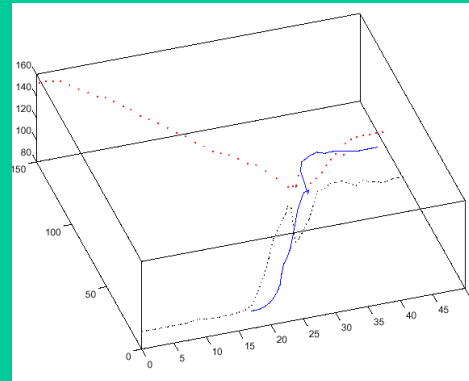
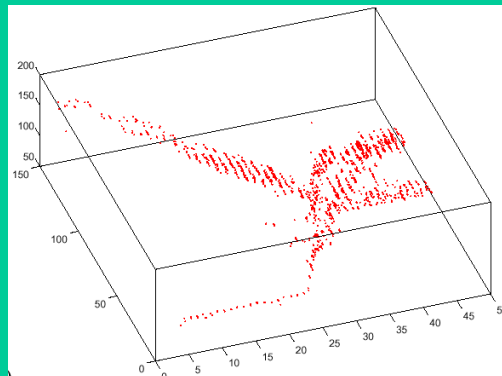
Foreground



Plan view



2. Plan-view integration from multiple stereo views (late segmentation)

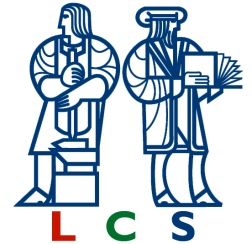


3. Trajectory estimation in spatio-temporal (plan-view vs. time) space

-
- *Active Camera motion*
 - *Microphone array*
 - *Activity classification*

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Research Plan for the Next Six Months

- Improve speed of range foreground estimation
- Automate geometric calibration of multiple camera system
- Add texture/color classification to disambiguate intersecting trajectories
- Add virtual background constraints from multiple views
- Active camera control
- Focusing microphone array on one or more speakers (and attenuating other speakers)
- View-invariant recognition for identification and trajectory disambiguation
- Model generation for virtual conferencing