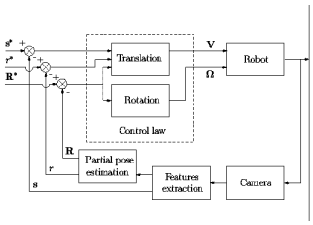
# Real-Time Visual Servoing and Tracking
## Organizers & Chairs: Peter Corke, Seth Hutchinson

**Real-Time Vision, Tracking and Control**
P. I. Corke[1] and S. A. Hutchinson[2]
[1]CSIRO, Australia and [2]University of Illinois at Urbana-Champaign

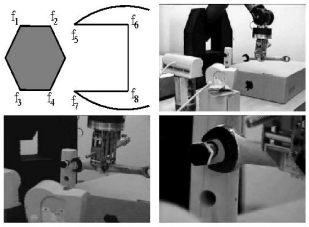
**2 1/2 D visual servoing: a possible solution to improve image-based and position-based visual servoings**
F. Chaumette[1] and E. Malis[2]
[1]IRISA / INRIA Rennes and [2]Cambridge University

- Description of potential problems in visual servoing
- 2 1/2 D visual servoing: a promising approach
- Presentation of 2 control schemes
- Advantages/drawbacks



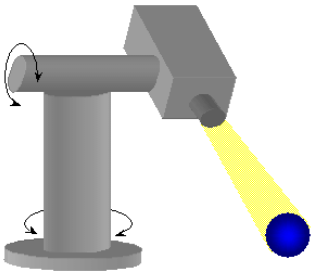

**On Specifying and Performing Visual Tasks with Qualitative Object Models**
G. D. Hager[1] and Z. Dodds[2]
[1]Johns Hopkins University and [2]Harvey Mudd College

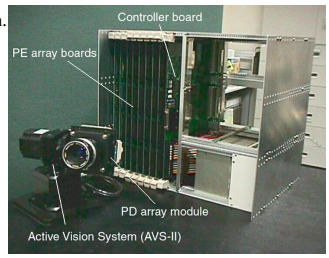
- Object and camera uncertainty limit hand/eye abilities.
- We present limitation-respecting task languages.
- Several tasks are shown using weak object models.
- Guarantees are possible even without full knowledge.



**Real-Time Vision, Tracking and Control - Dynamics of Visual Servoing**
Markus Vincze
Vienna University of Technology

- What is the
- Best performance is expressed as maximum image pixel error (=prop. to max. velocity of target)
- Result 1: use architecture for parallel image acquisition and processing
- Result 2: use high-speed camera and small image windows



**1 ms column parallel vision system and its application of high speed target tracking**
Y. Nakabo[1], M. Ishikawa[1], H. Toyoda[2] and S. Mizuno[2]
[1]University of Tokyo and [2]Hamamatsu Photonics K. K.

- We realized a high speed visual feedback system with 128x128 resolution.
- Column parallel data transfer and all parallel image processing enable the system to work at 1ms cycle time.
- We present a high speed target tracking and some results of image processing.
- Advantages of our system design for robot control applications are discussed.