

- [Home](#)
- [About the CVR](#)
- [News](#)
- [Members](#)
- [Seminar Series](#)
- [Conference](#)
- [Resources](#)
- [CVR Summer School](#)
- [Research Labs](#)
- [Training at the CVR](#)
- [Partnering with the CVR](#)
- [Contact Us](#)

- Monday, June 5, 2006  
Looking at people... and animals

A grand challenge in computer vision is to build systems that can find human figures in either still frames or video sequences, and determine what action they are performing. In this talk I will present work addressing this challenge. The two tools we will use are shape matching and segmentation. I will describe the use of shape contexts and geometric blur, a related shape descriptor, in detecting pedestrians and localizing 2d joint positions in images of people. We have also developed a method for estimating human body joint positions that uses image segmentation as a pre-processing step. Images are over-segmented into "superpixels", and the search for body joints is conducted in the reduced space of superpixels, leading to more efficient algorithms. Finally, I will show how we can apply these techniques to a novel domain -- scientific monitoring. We are collaborating with natural scientists, applying computer vision techniques to aid in data collection tasks such as counting fish of different species and monitoring grizzly bear behaviours.

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