Computer Vision Internship Opportunities Summer '06
GE Global Research

The Visualization and Computer Vision Group (VCV) offers internship opportunities in the areas of surveillance, security, clinical applications, and biomedical computing.

GE Global Research is one of the world's most diversified industrial research labs, providing innovative technology for all of GE's businesses and is headquartered in Niskayuna, New York. VCV's projects impact GE businesses including GE Healthcare, GE Security, and GE Aircraft Engines. In addition the group is working on projects funded by agencies such as DARPA, DOD, and NIH. These internships offer an opportunity to engage in cutting edge research that directly relates to industrial applications and GE products.

Candidates must be enrolled in a PhD program and have the ability to map technical expertise into the different application areas. Ideally the candidate should have started the thesis work and have research interests matching the project descriptions. Candidates are expected to contribute to the ongoing algorithm development and work may be considered for publication in relevant conferences and journals. Interested candidates should review the project descriptions and send their resume to the relevant contact person by **15. Jan 2006**.

For more information on GE Global Research go to www.research.ge.com.

Surveillance

VCV researchers are developing algorithms for the automatic extraction of salient content from aerial video of complex scenes. Research areas include visual tracking, scene segmentation, event recognition, object detection, and change detection. One particular problem of interest is to track vehicles for long periods of time through extended occlusions. Background knowledge: computer vision and machine learning.
Contact: Rahul Bhotika (rahul.bhotika@research.ge.com)

Security

VCV is developing innovative intelligent video solutions for GE's security business. Current research efforts are focused on problems relating to biometrics, person detection, tracking individuals across camera networks, active camera control and the efficient search in large video archives. Required background knowledge: computer vision, Bayesian statistics, and video processing. Contact: Jens Rittscher (jens.rittscher@research.ge.com)

Clinical Applications

VCV is developing applications to enhance clinicians' ability to perform disease characterization, quantification, and diagnosis from medical images. The goal of this work is the development of techniques which will allow the early detection of cancer and other chronic diseases such as emphysema. In addition this research will reduce the need for invasive procedures such as colonoscopy. Background knowledge: computer vision, 3D medical image processing, Bayesian inference. Contact: Rahul Bhotika (rahul.bhotika@research.ge.com)

Imaging of Cells and Tissues

Automated quantification of microscopy images for high-throughput screening is a growing area for computer vision applications. Particular challenges are the segmentation of transmitted light images and 3D volumes captured by confocal microscopes and the automatic extraction of morphometrical features. The intern would have the opportunity to work in close collaboration with researchers in the biosciences to develop algorithms for the automatic screening of cell and tissue assays. Background knowledge: computer vision, 3D image processing, segmentation using shape priors and visualization.
Contact: Jens Rittscher (jens.rittscher@research.ge.com)