



UPPSALA
UNIVERSITET

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Personalavdelningen
Handl: Lena Kvist

Uppsala University hereby declares the following position open for application:

PhD Position in Image Analysis for Cancer Diagnosis

at the Centre for Image Analysis.

The Centre for Image Analysis (CBA) is a joint research effort between Uppsala University and the Swedish University of Agricultural Sciences. CBA was established for research and development in digital image analysis and scientific visualization. More information can be found at <http://www.cb.uu.se>.

Prostate cancer is the leading cause of death in men. Diagnosis is based on Gleason grading, which is the most widely used system for determining the severity of prostate cancer from tissue samples. However, Gleason grading is highly subjective with significant variation between experienced pathologists. An improved prostate cancer grading system will both prolong lives and reduce medical costs significantly.

We are working on replacing subjective diagnosis of prostate cancer with automatic malignancy grading using a combination of tissue staining and image analysis. We have developed staining methods that identify cancerous and non-cancerous glands and also use a larger part of the color spectrum than conventional stains facilitating more reliable image segmentation. This staining method combined with our novel color analysis, which is robust to variations in tissue staining, will be the basis for image segmentation algorithms that extract morphological features from prostate tissue in a reproducible manner.

Using biopsy and prostatectomy material with a consensus Gleason grade, we will use statistical and information visualization methods to find the features that correlate well with the grade. We will also develop new classifiers for cancer grading that reliably identify malignancy relative to disease end points. By training the classifiers on the disease outcome rather than on the Gleason grade, we hope to get better prognostication than currently possible.

Position: We are seeking a PhD candidate to develop image analysis software in this project to facilitate automatic malignancy grading and to develop new classifiers for better prognostication of prostate cancer.

PhD positions are primarily intended for the students' graduate education. In addition to research, teaching or other duties at CBA, not exceeding 20% of full time, is included. Formal acceptance as a PhD student is a prerequisite.

Prerequisites: A MSc or MEng or similar degree in science/technology with a focus on computer science, engineering, or mathematics. Experience in image processing and signal processing is highly valued, as is knowledge of statistical techniques and information visualization. Programming experience is essential. CBA strives for a high female to male student ratio and encourages female applicants.

The application should contain a CV, high school and college transcripts, letters of recommendations, and a letter describing why you want to become a doctoral candidate and why this line of research appeals to you.

For further information, please contact Prof. Ingrid Carlbom via email, ingrid@cb.uu.se, or by phone, + 46 18-471 7004 or 0737-451791. Union representatives are Anders Grundström, Saco, phone. +46-18-471 5380, Carin Söderhäll, TCO/ST, phone. +46-18-471 1996, Stefan Djurström, Seko, phone. +46-18-471 3315.

You are welcome to submit your application no later than 19 April, 2010, UFV-PA 2010/880. Use the link below to access the application form.

[PhD Position in Image Analysis for Cancer Diagnosis](#)