



# Diploma Thesis

## *Image Registration using the Discrepancy Norm*

### Project description

A wide-spread task in modern computer vision is the matching (registration) of two images such that their overlay is as perfect as possible (Example: You have a logo and search the appearance of this one in a bigger image.).

A huge number of different algorithms to perform this task have been proposed in the last years, all of them with specific strengths and weaknesses.

In this diploma thesis one should have a closer look to the properties of the so called "Discrepancy Norm".

An application for funding (FWF) for follow up PhD-projects is pending.

### Prerequisites

Some knowledge in at least one of the following areas is mandatory:

- Image processing
- General Numerics
- Stochastics

### Supervisors

Dr. Frank Bauer

Dr. Bernhard Moser (SCCH)

Prof. Peter Klement

### Miscellaneous

The project will be done in close collaboration with the Software Competence Center Hagenberg; parts of the working time should be spent there.

### Literature

Moser, B. *Similarity measure for image and volumetric data based on Hermann Weyls discrepancy*. IEEE Transaction on Pattern Analysis and Machine Intelligence, submitted 2008

Moser, B., Bauer, F. and Kazmar, T. *Image Similarity Based on the Discrepancy Norm - Theory and Applications* FWF Proposal 2008 (confidential)

### Contact

Dr. Frank Bauer
Institut für Wissensbasierte Math. Systeme
Johannes Kepler Universität Linz
A-4040 Linz
Tel. +43 (0)732 2468 9195
Fax +43 (0)732 2468 1351
E-Mail frank.bauer@jku.at