

Institutskolloquium

Thema: **Discriminative Generalized Hough Transform for Object Localization and Classification in Medical Images**

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Abstract:

In this presentation we will introduce the discriminative generalized Hough transform (DGHT) as an efficient and reliable means for object localization and classification in medical images. The DGHT combines the generalized Hough transform (GHT) with a discriminative training technique for the GHT models. To this end, the model points are equipped with individual weights, which are trained in a discriminative manner with respect to a minimal localization error. The basic algorithm is presented in conjunction with several extensions. These include (1) the automatic generation of models from training images and their iterative refinement, (2) the training of joint models for similar objects, (3) a multi-level approach and (4) a classifying model. We will present experimental results on different localization and classification tasks including 2D and 3D images from different modalities, which demonstrate the generality and robustness of the approach.



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