

M.Sc. Oliver Mader,  [Fachbereich Informatik und Elektrotechnik](#), Fachhochschule Kiel, Kiel

**Abstract:** Accurate localization of sets of anatomical landmarks is a challenging task, yet required by many tasks in automatic analysis of medical images. Several groups, e.g., Donner et al., have shown that it is beneficial to incorporate geometrical relations of landmarks into detection procedures for complex anatomical structures. We present a two-step approach (compared to three steps as suggested by Donner et al.) combining regression tree ensembles with a Conditional Random Field (CRF), modeling spatial relations. The comparably simple combination achieves a localization rate of 99.6% on a challenging hand radiograph dataset, beating recent state-of-the-art results.