



LABORATORY of
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SEMINAR on
COMPUTATIONAL
and APPLIED
MATHEMATICS

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Canny and probabilistic graphical models for binary image segmentation

A few small modifications of the well-known Canny edge detector are proposed that have significant consequences for a probabilistic framework for image segmentation. In particular it will be demonstrated that it is important to view an edge as falling between two pixels, as opposed to a pixel itself. This idea is further developed by combining the modified Canny edge detector with a probabilistic graphical model. Although this allows a general framework for image segmentation, the case of binary image segmentation into foreground and background will be discussed in detail.