

Chamfer Matching Problem

Why is the distance transform of the edge image used when matching image edges?

ANSWER:

The measure of closeness of fit is the distance to the nearest edge pixel. However, having to find the closest pixel is computationally complex, and the distance is needed to be computed many times, both for a single position of the template, and for each template position. Computing the distance transform of the edge image once greatly speeds up the fitness calculation.