

Petia Radeva

## **Deformable models**

Deformable models (snakes, flexible templates, active shape models, geodesic snakes, etc.) got to their adolescence after fulfilling more than 10 years of existence. It is time to stop and review the original idea and the evolution of the "elastic curves that deform to adjust to the image features". After a "high-speed"-travel through the history of the snakes overlooking what they have been useful for and how they "cloned", in this talk we will propose a new point of view on the deformable models questioning their main puzzle pieces: deformable model representation, its mutual interaction with the image features, deformation invariance and optimization approach. In particular, we will discuss how deformable models can be enriched by context shapes, boosting approaches and multi-task learning in order to propose robust approaches for object recognition. Different real application regarding traffic object recognition and medical imaging will be presented.