

Gaussian Process Implicit Surface for Object Estimation and Fluent Grasping

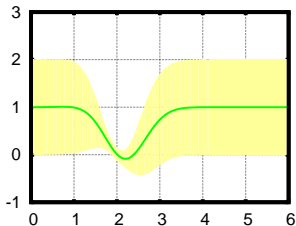
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Sensors

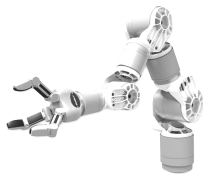
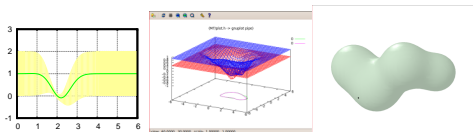
vision
haptic
laser ...



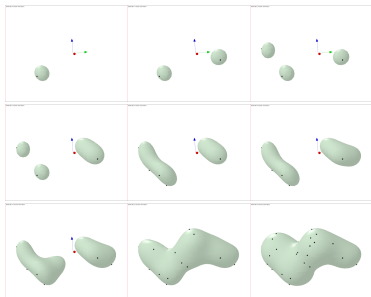
Grasp controller

$$y_o \in \mathbb{R}$$
$$y_o = \left| \sum_{i \in tips} \phi_i^z(\vec{q}) \right|$$
$$y_o^* := 0 \dots$$

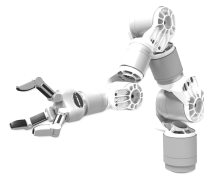
Gaussian process implicit surface



sensor data



Gaussian process posterior as object estimation



using implicit surface as potential field for grasp trajectory