



The University of Chicago

Department of Statistics

Seminar Series

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Template Estimation in Computational Anatomy

MONDAY, November 17, 2008 at 4:00 PM
133 Eckhart Hall, 5734 S. University Avenue

Refreshments following the seminar in Eckhart 110.

ABSTRACT

One of the main purposes of computational anatomy is the study of the statistical distribution of shapes of human organs and their relation to pathologies and diseases. The non-linear, infinite-dimensional space of shapes can be modeled as a Riemannian manifold, in relation with the action that diffeomorphisms have on them. In such a context, it is possible to define generative models of shapes modeled as random deformations of an exemplar, or template.

This talk describes estimation methods for learning this template from data. In two contexts, namely image deformation and surface deformation, we will describe a statistical model for noisy data acquisition, and a Bayesian approach for the estimation of the template, modeled as a deformation of what will be called a hyper-template. This will be illustrated by numerical experiments on 3D brain and cardiac images.

Please send email to Mathias Drton (drton@galton.uchicago.edu) for further information. Information about building access for persons with disabilities may be obtained in advance by calling Kelly Macias (773.702.8333) or by email (kmacias@galton.uchicago.edu).