Information Geometry: Historical Episodes and Recent Developments

Shun-ichi Amari

RIKEN Brain Science Institute

Japan

e-mail: amari@brain.riken.jp

I begin with personal and historical episodes concerning early periods of information geometry. Then, I will touch upon topics of my recent interests: They are

1) geometrical aspects of system complexity, information integration and consciousness,

2) topological aspects and natural gradient learning of singular statistical models, in particular multilayer perceptrons used in deep learning,

3) canonical divergence of statistical manifolds, and

4) geometry of score matching.