Insalate di Matematica

presents

Generative Bayesian Models for Brain Age Prediction

14:00 - 18/03/2021
Google Meet meeting
Università di Milano-Bicocca

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Abstract

Our brain continuously develops and changes during life-time and recent researches show that we can predict a subject's age right from his/her brain scan. This brain-based predicted age measures our biological age, which may differ from the chronological age. Since some neurological diseases, e.g. Alzheimer, Multiple Sclerosis and Schizophrenia, are known to cause an accelerated brain aging, predicting a subject's brain age is a useful screening tool to early detect the onset of such diseases. While the majority of methods in the literature for brain age prediction are discriminative models, the prediction method that we propose is a generative Bayesian model, which yields interpretable predictions. The main features and challenges of such models will be discussed.

Keywords:

Brain age · Generative models · Bayesian inference · Prediction models

"Obvious" is the most dangerous word in mathematics. - Eric Temple Bell