Neuroinformatics

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Original Article

BrainMap

The Social Evolution of a Human Brain Mapping Database

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Abstract

Human brain mapping is an experimental discipline that establishes structure–function correspondences in the brain through the combined application of experimental psychology, human neuroscience, and noninvasive neuroimaging. A deep and diverse literature on the functional organization of the human brain is emerging, which has pushed neuroimaging squarely into the scientific mainstream. Because of this rapid growth, there is a great need to effectively collect and synthesize the body of literature in this field. The BrainMap database was created in response to this need as an electronic environment for modeling the human brain through quantitative meta-analysis of the brain mapping literature. BrainMap was originally conceived in 1987 and has received continuous funding from 1988 to 2004. During this time, BrainMap has consistently evolved to meet the challenges of an ever-changing field and continues to strive toward higher levels of applicability. In this article, we discuss BrainMap's structure and utility, and relate its progress and development as a neuroinformatics tool.

Index Entries: Databases; BrainMap; human brain mapping; functional neuroimaging; neuroinformatics; data entry problem.

Introduction

Human brain mapping (HBM) is an experimental discipline that establishes structure–function correspondences in the human brain through the combined application of experimental psychology, human neuroscience, and noninvasive neuroimaging. The explosion of research in this multidisciplinary field has led to a large and diverse collection of published studies aimed at mapping neural systems that govern cognition, perception, emotion, and action. In addition to mapping normal functions, noninvasive functional imaging is now used to study the pathophysiology of a wide range of diseases, normal and abnormal development, plasticity

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