

Computational Discovery of Scientific Knowledge

Advances in technology have enabled the collection of data from scientific observations, simulations, and experiments at an ever-increasing pace. For the scientist and engineer to benefit from these enhanced data collecting capabilities, it is becoming clear that semi-automated data analysis techniques must be applied to find the useful information in the data. Computational scientific discovery methods can be used to this end: they focus on applying computational methods to automate scientific activities, such as finding laws from observational data. In contrast to mining scientific data, which focuses on building highly predictive models, computational scientific discovery puts a strong emphasis on discovering knowledge represented in formalisms used by scientists and engineers, such as numeric equations and reaction pathways.

This state-of-the-art survey provides an introduction to computational approaches to the discovery of scientific knowledge and gives an overview of recent advances in this area, including techniques and applications in environmental and life sciences. The 15 articles presented are partly inspired by the contributions of the International Symposium on Computational Discovery of Communicable Knowledge, held in Stanford, CA, USA in March 2001. More representative coverage of recent research in computational scientific discovery is achieved by a significant number of additional invited contributions.

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Todorovski (Eds.)



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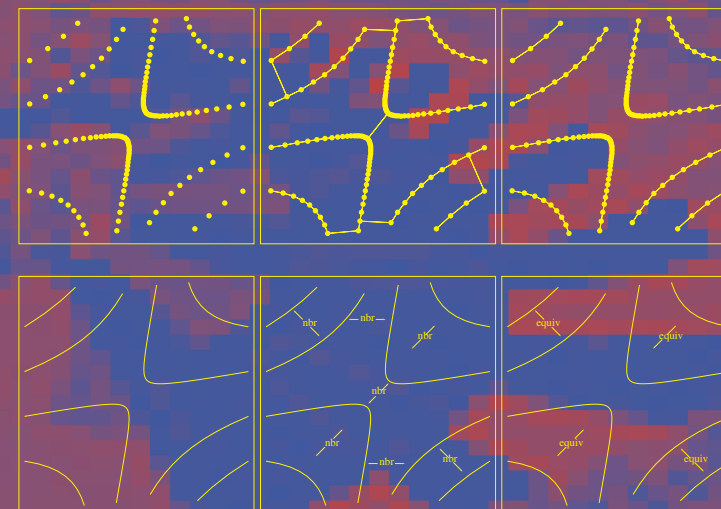
State-of-the-Art
Survey

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Sašo Džeroski
Ljupčo Todorovski (Eds.)

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Introduction, Techniques, and Applications in
Environmental and Life Sciences



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