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Titolo	Projection-Based Clustering through Self-Organization and Swarm Intelligence [[electronic resource]] : Combining Cluster Analysis with the Visualization of High-Dimensional Data / / by Michael Christoph Thrun
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Nota di contenuto	Approaches to Unsupervised Machine Learning -- Methods of Visualization of High-Dimensional Data -- Quality Assessments of Visualizations -- Behavior-Based Systems in Data Science -- Databionic Swarm (DBS).
Sommario/riassunto	This book is published open access under a CC BY 4.0 license. It covers aspects of unsupervised machine learning used for knowledge discovery in data science and introduces a data-driven approach to cluster analysis, the Databionic swarm(DBS). DBS consists of the 3D landscape visualization and clustering of data. The 3D landscape enables 3D printing of high-dimensional data structures. The clustering and number of clusters or an absence of cluster structure are verified by the 3D landscape at a glance. DBS is the first swarm-based technique that shows emergent properties while exploiting concepts of swarm intelligence, self-organization and the Nash equilibrium concept from game theory. It results in the elimination of a global objective function and the setting of parameters. By downloading the R package

DBS can be applied to data drawn from diverse research fields and used even by non-professionals in the field of data mining. Contents Approaches to Unsupervised Machine Learning Methods of Visualization of High-Dimensional Data Quality Assessments of Visualizations Behavior-Based Systems in Data Science Databionic Swarm (DBS) Target Groups Lecturers, students as well as non-professional users of data science, statistics, computer science, business mathematics, medicine, biology The Author Michael C. Thrun, Dipl.-Phys., successfully defended his Ph.D. in 2017 at the Philipps University of Marburg. Thrun's advisor was the Chair of Neuroinformatics, Prof. Dr. rer. nat. Alfred G. H. Ultsch.
