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**Toward a methodology for agent-based data mining and visualization.**

Cao, Longbing (ed.) et al., Agents and data mining interaction. 7th international workshop on agents and data mining interation, ADMI 2011, Taipei, Taiwan, May 2–6, 2011. Revised selected papers. Berlin: Springer (ISBN 978-3-642-27608-8/pbk). Lecture Notes in Computer Science 7103. Lecture Notes in Artificial Intelligence, 4-15 (2012).

Summary: We explore the notion of agent-based data mining and visualization as a means for exploring large, multi-dimensional data sets. In Reynolds' classic flocking algorithm (1987), individuals move in a 2-dimensional space and emulate the behavior of a flock of birds (or "boids", as Reynolds refers to them). Each individual in the simulated flock exhibits specific behaviors that dictate how it moves and how it interacts with other boids in its "neighborhood". We are interested in using this approach as a way of visualizing large multi-dimensional data sets. In particular, we are focused on data sets in which records contain time-tagged information about people (e.g., a student in an educational data set or a patient in a medical records data set). We present a system in which individuals in the data set are represented as agents, or "data boids". The flocking exhibited by our boids is driven not by observation and emulation of creatures in nature, but rather by features inherent in the data set. The visualization quickly shows separation of data boids into clusters, where members are attracted to each other by common feature values.

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