



Contribution ID: 10

Type: Poster

Semi-supervised Learning for Aggregated Multilayer Graphs Using Diffuse Interface Methods and Fast Matrix Vector Products

We generalize a graph-based multiclass semi-supervised classification technique based on diffuse interface methods to multilayer graphs. Besides the treatment of various applications with an inherent multilayer structure, we present a very flexible approach that interprets high-dimensional data in a low-dimensional multilayer graph representation. Highly efficient numerical methods involving the spectral decomposition of the corresponding differential graph operators as well as fast matrix-vector products based on the nonequidistant fast Fourier transform (NFFT) enable the rapid treatment of large and high-dimensional data sets. In fact, the computational complexity depends linearly on the network size in each iteration step in all stages of our algorithm.

Primary author: BERGERMANN, Kai (TU Chemnitz)

Co-authors: Prof. STOLL, Martin (TU Chemnitz); Dr VOLKMER, Toni (TU Chemnitz)

Presenter: BERGERMANN, Kai (TU Chemnitz)

Session Classification: Poster