

Bipartite analogues of comparability and co-comparability graphs

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I will discuss bigraph analogues of these two popular graph classes. Surprisingly, in the context of bipartite graphs, they turn out to define the same class. I will mention characterizations in terms of orderings, orientations, and forbidden substructures. These definitions, together with some concepts introduced earlier, create a bipartite world in which one can find analogues of traditional results about graph classes. For instance, in analogy of the fact that the class of interval graphs is the intersection of the classes of cocomparability graphs and chordal graphs, it can be shown that the class of interval containment bigraphs is the intersection of the classes of co-comparability bigraphs and chordal bigraphs. This talk is based on results joint with Jing Huang, Jephian Lin, Ross McConnell, and Arash Rafiey.

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