

Paul Erdős Memorial Lecture:
Generalizations of Interval Graphs

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Abstract

Interval graphs arose in the nineteen fifties and have become a staple of graph theory, both for their appealing applications and for their rich mathematical structure yielding elegant characterizations and efficient algorithms.

Recently, interval graphs have naturally appeared in the context of constraint satisfaction problems. Progress in understanding what structures make CSP's tractable suggests generalizations and analogues of interval graphs. I will discuss obstruction characterizations and recognition algorithms for these generalizations. Applications to the CSP dichotomy problem will also be mentioned. This is joint work with Tomás Feder, Jing Huang, and Arash Rafiey.