
PATRICK GASKILL, Virginia Commonwealth University
The Independence Number Project: Difficult Graphs and Conjectures

The independence number can be computed efficiently for many graph classes, either because they belong to a class of graphs where an efficient algorithm exists (for example, claw-free graphs), or because efficiently computable upper and lower bounds predict the value of this invariant. We discuss a project to extend independence number theory and to find new graph classes where the independence number can be efficiently computed.

In particular we discuss computer-generated conjectures arising from graphs whose independence number cannot be predicted by known efficiently computable upper and lower bounds.