

Characterization of Symmetric Digraphs whose Underlying Graph is the Complement of its Domination Graph

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Factor and Langley (2008) characterized the digraphs with equal domination graphs and underlying graphs. Their work motivated a new question: Is it possible for the underlying graph of a digraph to be the complement of its domination graph? This implies that every pair of adjacent vertices must not dominate and every pair of non-adjacent vertices must dominate. Answer to this question and some extensions may be very helpful in addressing the issue of algorithm bias and some other bias problems. In this research, we focused on characterizing symmetric digraphs (connected and disconnected). This provides the foundation to later extend this work to other types of digraphs.

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