Hamiltonian cycles in solid grid graphs

Publisher: IEEE

Cite This PDF

C. Umans ; W. Lenhart All Authors

Abstract:A grid graph is a finite node induced subgraph of the infinite two dimensional integer grid. A solid grid graph is a grid graph without holes. For general grid graphs, th... **View more**

Metadata

Abstract:

A grid graph is a finite node induced subgraph of the infinite two dimensional integer grid. A solid grid graph is a grid graph without holes. For general grid graphs, the Hamiltonian cycle problem is known to be NP complete. We give a polynomial time algorithm for the Hamiltonian cycle problem in solid grid graphs, resolving a longstanding open question posed by A. Itai et al. (1982). In fact, our algorithm can identify Hamiltonian cycles in quad quad graphs, a class of graphs that properly includes solid grid graphs.

Published in: Proceedings 38th Annual Symposium on Foundations of Computer Science

Date of Conference: 20-22 October 1997

INSPEC Accession Number: 5809396

Date Added to IEEE *Xplore*: 06 August 2002

DOI: 10.1109/SFCS.1997.646138

Print ISBN:0-8186-8197-7

Publisher: IEEE

Print ISSN: 0272-5428

Conference Location: Miami Beach, FL, USA

Keywords

Metrics

More Like This

Resilience Assessment Method of Integrated Electricity and Gas System Based on Hetero-functional Graph Theory
2022 2nd International Conference on Electrical Engineering and Control Science (IC2ECS)
Published: 2022

Graph theory towards designing graphical passwords for mobile devices
2017 IEEE 2nd Information Technology, Networking, Electronic and Automation Control Conference (ITNEC)
Published: 2017

Show More