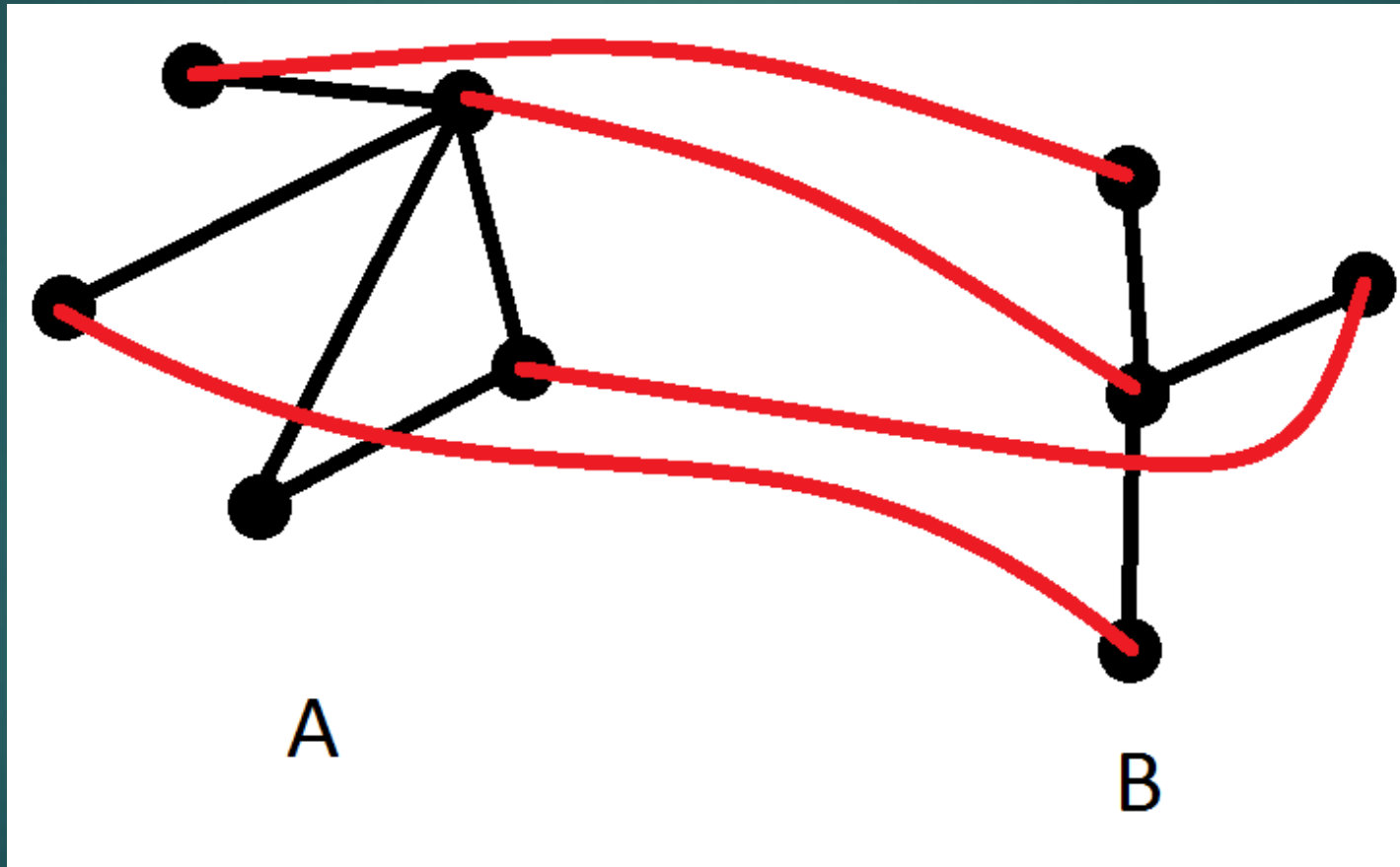


Subgraph Isomorphism

BY DANIEL HEFNER

Definition



Applications



- ▶ Medical research
 - ▶ Disease gene association
 - ▶ Biochemical networks
- ▶ Information analysis
 - ▶ Information or event extraction
- ▶ Bioinformatics
 - ▶ Protein-protein association

NP Hard

- ▶ Consider the maximum clique problem.

Strategy

- ▶ Search for a mapping:
 - ▶ Chose an assignment for each vertex
 - ▶ If at any point a valid assignment cannot be made, return to the previous vertex and chose a different assignment
 - ▶ The answer is found when either a valid mapping is constructed or all valid options are eliminated.

Refined search pattern

- ▶ ILF(k) – Node degrees
- ▶ LAD – Node adjacencies

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