

# Notes about Proof Complexity

Xinhao Nie

*Aarhus University*

April 21, 2025

## 1 Complexity of Graph-theoretic Problems

**Definition 1.1.** HAMILTON GRAPH:

- Input: A graph  $G$
- Output: *YES* if there is a hamilton path in graph  $G$ , otherwise, *NO*. A hamilton path can visits every vertex in the graph exactly once.

**Theorem 1.1.** HAMILTON GRAPH *is* NP-complete .

*Proof.* Amazing!

□