

# Knowledge Representation and Inference I

Tutorial exercise for week beginning Oct 26, 1987

(After a problem in 'Logical Foundations of AI', Genesereth/Nilsson, Morgan Kaufman, 87 - not yet published in the UK, sorry!)

Peter has been murdered; Alan, Bob and Chris are suspects. Conspiracy can be ruled out, the murder was done by just one of the suspects.

The police gather the following statements:

- Alan says he did not do it. He says that Bob was Peter's friend but that Chris hated Peter.
- Bob says that he was out of town that day, and anyway he didn't even know Peter.
- Chris says that he is innocent, and that he saw Alan and Bob talking to Peter just before the murder.

In this best of all possible worlds (except that Peter is dead), everybody is telling the truth except maybe the murderer. First, what extra (common-sense) information is needed to solve the crime. Translate the whole problem into a first-order predicate logic form (make up your own language), and then provide a resolution-based proof of who the murderer is.