

## Intelligent Systems

# Exercise sheet 11

## Inductive Logic Programming

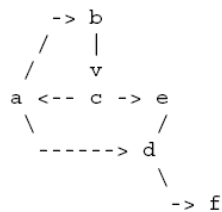
**Exercise 1 (10 points)** Michalsk's train problem (see lecture slides):

- Download Progol, <http://www.doc.ic.ac.uk/~shm/Software/progol5.0>
- Use the Progol input file for Michalski's train problem, [http://www.comp.rgu.ac.uk/staff/chb/teaching/cmm510/michalski\\_train\\_data](http://www.comp.rgu.ac.uk/staff/chb/teaching/cmm510/michalski_train_data)
- Generate the hypotheses

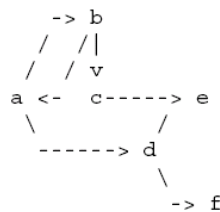
**Exercise 2 (10 points)** Graph Learning Task.

The following figure shows five graphs which consist of nodes and arcs which connect nodes. The learning task is to determine whether a graph is acyclic or cyclic which is determined by one or more properties of a graph.

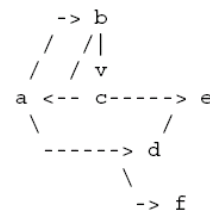
Graph 1



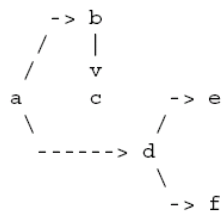
Graph 2



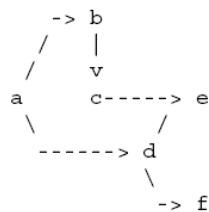
Graph 3



Graph 4



Graph 5



Devise a rule or set of rules which solve the learning task. What steps are necessary to run Progol to generate a hypothesis?