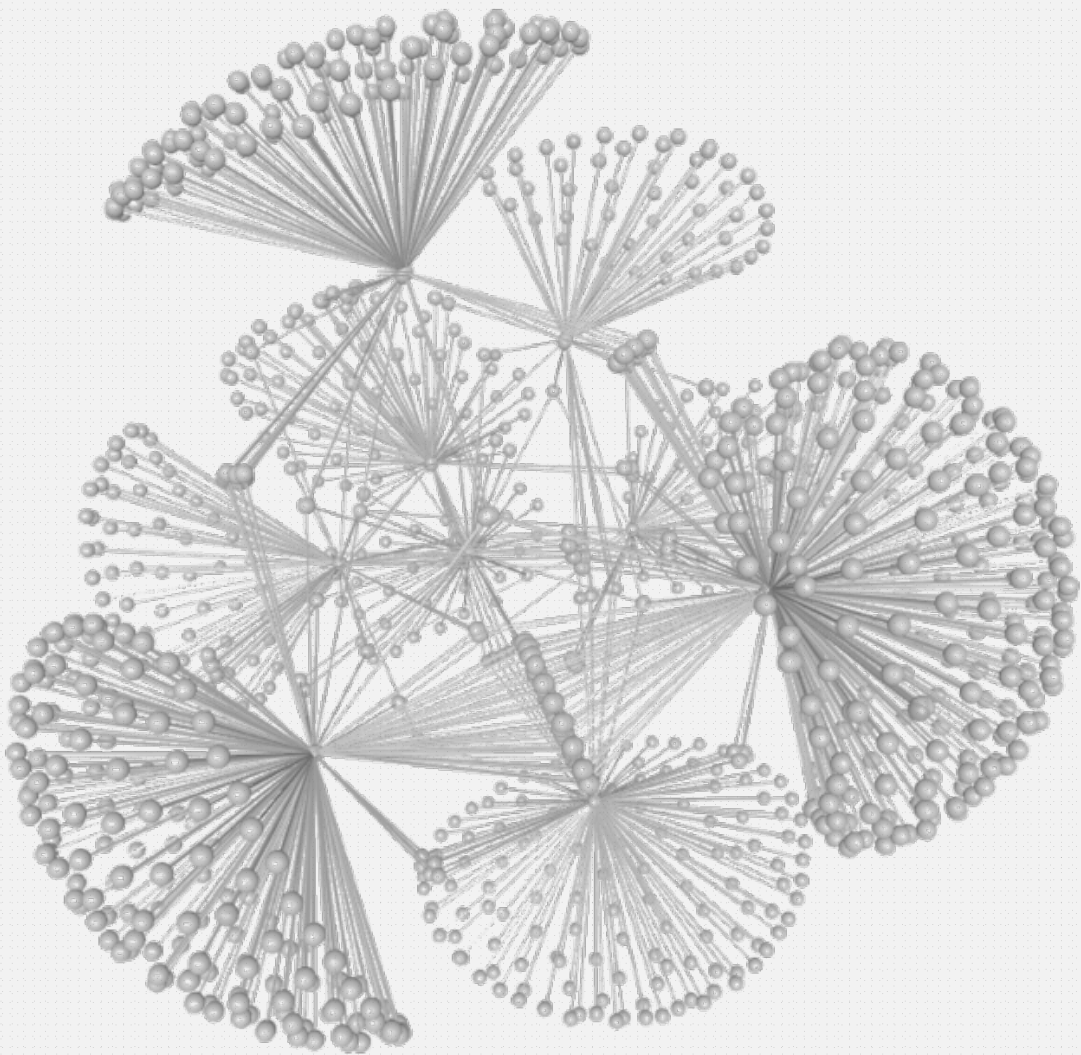


Probabilistic Programming

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H05N0A: CAPITA SELECTA : ARTIFICIAL
INTELLIGENCE

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Below's our solution for the given challenges. The questions in each section of the original assignment are answered in a section with a corresponding title.

```
1 person(a). person(b). person(c).
2 0.2::stress(X) :- person(X).
3 0.1::friends(X,Y) :- person(X), person(Y).
4 0.3::smokes(X) :- stress(X).
5 0.4::smokes(X) :- friends(X,Y), smokes(Y).
6 query(smokes(a)).
```

Code snippet 1: PROBLOG code used throughout.

Probabilistic Inference Using Weighted Model Counting

SRL to CNF

SRL to PGM

PGM to CNF

Weighted Model Counting

Lifted Inference

Parameter Learning