

# Learning Based Java

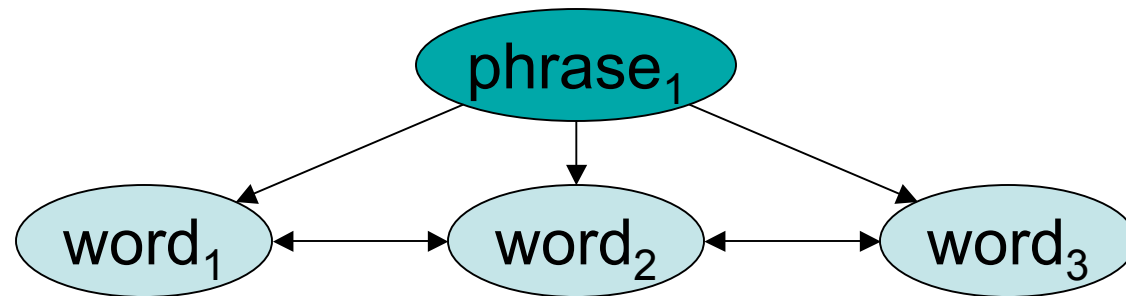
## The Basics

MIAS DSSI

6/8/07

# Assumptions

- The user has an OO representation



- Only objects need to be classified

# Classifiers

- Any method that classifies an object ...

```
discrete POSLabel(POSLabelledWord w) <-
```

... and returns features

- Does not imply learning

```
{ return w.label; }
```

# Learning Classifiers

- Learn to mimic an oracle
  - Using other classifiers as features
  - From data
  - With a learning algorithm
- 
- Can produce a discrete distribution

# Inference

- Making classifiers' decisions coherent
- Example: Shallow Parsing

John threw the ball to Mary .



*Chunks cannot overlap*

- Maximize  $E[\text{correct decisions}]$

# Constraints

- Written in First Order Logic
- In terms of learning classifiers and Java objects

```
forall (Phrase p in sentence)
  exists (Word w in p.allWords())
    MyLearner(w) :: "yes!"
```