

# Expectation Maximization

## Chicken and egg problem

- Need Gaussian parameters to estimate sources
- Need sources to estimate Gaussian parameters

## EM algorithm

1. Start with 2 randomly placed Gaussians parameters  $\theta$
2. Until convergence repeat:
  - a) For each point compute  $p(t = c \mid x_i, \theta)$ : does  $x_i$  look like it came from cluster  $c$ ?
  - b) Update Gaussian parameters  $\theta$  to fit points assigned to them