

## Assignments $\mathcal{N}^o$ 0

released: 23.10.2013      due: 28.10.2013, 9AM

### Task 1: Uniform Random Graph Model

2 points

Assume we have drawn a random graph from the uniform random graph model on the set of all *directed*, loopless graphs with  $n$  vertices. What is the probability that this graph has exactly  $m$  edges?

### Task 2: Edge Probabilities

4 points

Define at least four different random graph models on the set of undirected, loopless graphs with 3 vertices, such that each random graph model yields uniform edge probabilities of  $\frac{1}{4}$ .

### Task 3: **visone**

0 points

Download the current version of **visone** at <http://visone.info> and give it a test run — make sure that Sun Java Runtime Environment (JRE) 6 (or newer) is installed on your computer.

An introduction to **visone** will be provided in the first tutorial. If you like to participate actively, then also download your facebook friendship graph and bring your laptop to the tutorial session.

#### How to download your facebook friendship graph:

- Goto <https://apps.facebook.com/namegenweb/>
- In step two add the “gender” attribute and press download.
- Save your network as Graphml.

If you don't want to use your own data or if you don't have a facebook account, you can download an example graph from the lecture homepage.