Figure 1. The intuitions behind latent Dirichlet allocation. We assume that some number of "topics," which are distributions over words, exist for the whole collection (far left). Each document is assumed to be generated as follows. First choose a distribution over the topics (the histogram at right); then, for each word, choose a topic assignment (the colored coins) and choose the word from the corresponding topic. The topics and topic assignments in this figure are illustrative—they are not fit from real data. See Figure 2 for topics fit from data.

Topics

gene 0.04 dna 0.02 genetic 0.01

life 0.02 evolve 0.01 organism 0.01

brain 0.04 neuron 0.02 nerve 0.01

data 0.02 number 0.02 computer 0.01

Documents

Topic proportions and assignments

