

Probabilities and conditional probabilities. PC stands for profile class and NPC for neighbor profile class. Part (A): The eight entries give the relative frequency of each PC in an image of the diagnosis MCcHL (ID = 1721). For example, 31,6% of the 10,860 cells are small, round (PC = 0). Part (B): The 64 entries give the conditional probabilities,  $P(\text{NPC} = j \mid \text{PC} = i)$ , to find an NPC =  $j$  for a PC =  $i$ . The conditional probability is approximated by  $P(\text{NPC} = j \mid \text{PC} = i) = f(i, j)/f(i)$ , where  $f(i, j)$  is the frequency of pairs (PC =  $i$ , NPC =  $j$ ) in the neighborhood list. For example, the nearest neighbor of a small, round PC (PC = 0) is as well small, round (NPC = 0) with a probability of 0.354.

(A)

<i>PC</i>	0	1	2	3	4	5	6	7
	.316	.017	.046	.012	.376	.015	.199	.018

(B)

<i>PC</i>	0	1	2	3	4	5	6	7
<i>NPC</i>								
0	.354	.246	.323	.248	.308	.226	.289	.202
1	.013	.110	.016	.105	.012	.067	.015	.071
2	.049	.033	.077	.113	.036	.067	.053	.081
3	.009	.076	.026	.068	.007	.055	.015	.066
4	.384	.262	.289	.195	.418	.213	.374	.242
5	.011	.055	.020	.053	.007	.128	.009	.045
6	.167	.126	.228	.135	.203	.158	.221	.157
7	.012	.093	.022	.083	.009	.085	.020	.136