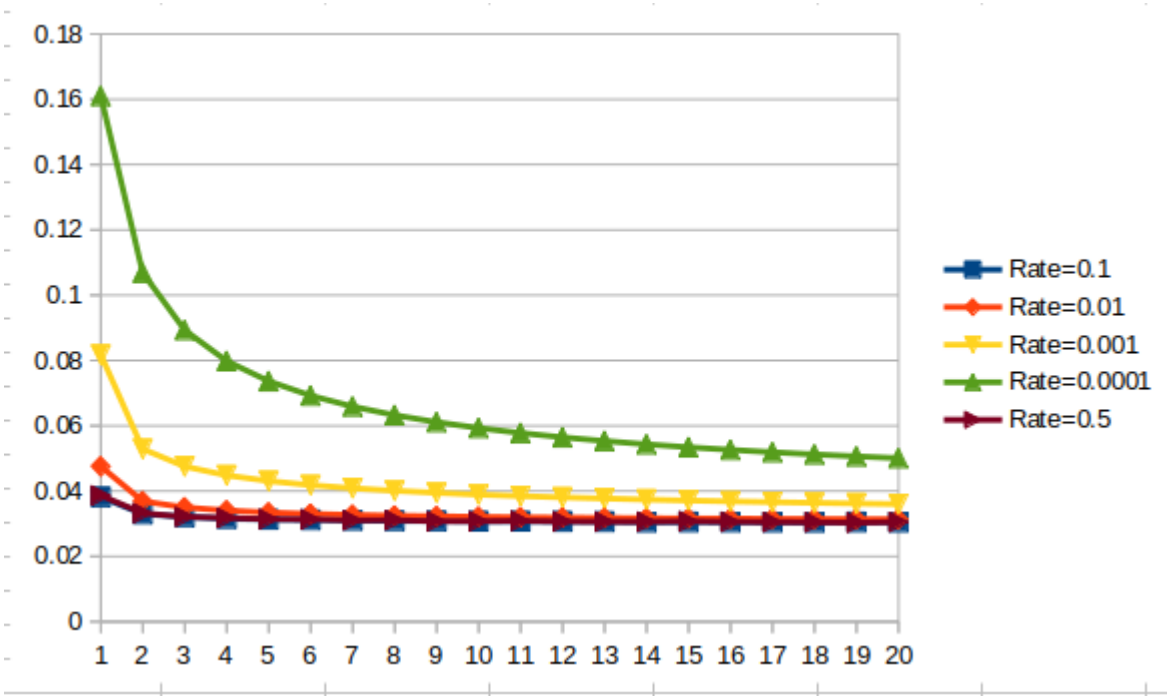
Neural Network problem 2

by: Olenburg Egor
load type: 60000 images.

Rate=0.1	Rate=0.01	Rate=0.001	Rate=0.0001	Rate=0.5
0.038162	0.04751	0.081738	0.160986	0.038626
0.032966	0.036882	0.052881	0.106819	0.033229
0.032081	0.034986	0.047517	0.089282	0.032101
0.03154	0.034023	0.044789	0.079797	0.031769
0.031298	0.033418	0.043049	0.073636	0.031366
0.031164	0.032997	0.041804	0.069225	0.031335
0.031008	0.032684	0.040849	0.065878	0.031039
0.030867	0.032442	0.040083	0.063236	0.031101
0.030809	0.032249	0.039449	0.061086	0.030723
0.0307	0.032093	0.038913	0.059295	0.030757
0.030717	0.031963	0.038451	0.057775	0.030858
0.030654	0.031853	0.038048	0.056466	0.030685
0.030592	0.03176	0.037691	0.055323	0.030613
0.030445	0.03168	0.037374	0.054315	0.030578
0.030495	0.03161	0.037089	0.053418	0.030722
0.030476	0.031548	0.036831	0.052612	0.030562
0.030427	0.031494	0.036597	0.051884	0.030504
0.030388	0.031445	0.036382	0.051222	0.030426
0.030494	0.031401	0.036185	0.050615	0.030307
0.030428	0.031361	0.036003	0.050059	0.030499



Training my network with 60000 images and having learning rate 0.0001 seems to have the most error, up to 0.16. I added learning rate 0.1 and it seems to be the optimal learning rate with the lowest possible error. Just to see I added another learning rate = 0.5 to compare between 0.0001 and 0.5, thus I got learning rate 0.1 with the minimum error.
According to graph, optimal minimum error at learning rate 0.1 I got at training cycle 2!;
therefor it took only one cycle to get to minimum error at this rate.
Error was a little bit bigger at learning rate 0.5!