
Unlike section 6 of chapter 2, section 7 is fully new (and quite complicated). Although I have previously seen the binomial coefficient, $\binom{k}{j} = \frac{k!}{j!(k-j)!}$, the multinomial $\binom{k}{j_1 \cdots j_n}$ is new, and feels strange since the denominator consists only of a product of the factorials of the j_i's.

In the formula for $P_k(\mathbf{h})$, I am unsure where the $j_i + \cdots + j_n = k$ (from the sum) comes from. I can compute it, but I do not know why.

The critical point classifier we discussed in class, using the Hessian matrix, seems convenient (though intensive if many variables are in play), but I wonder how common it is to run into quadratic forms.
