

```

function [lamb,mu,alpha,beta,lambnz,munz,w] = runSVMS3b(nu,rho,u,v,K)
%
%   Runs soft margin nu-SVM version s3
%
%   Computes eta using the duality gap
%   Needs a single support vector of type 1
%
%   p green vectors u_1, ..., u_p in n x p array u
%   q red   vectors v_1, ..., v_q in n x q array v
%
%   First builds the matrices for the dual program
%   K is a scale factor
%
p = size(u,2); q = size(v,2); n = size(u,1);

[lamb,mu,alpha,beta,lambnz,munz,lamK,muK,w,b,eta,nw,fail]
= doSVMS3b(nu,rho,u,v,K);

if n == 2
    [ll,mm] = showdata(u,v);
    if fail == 0
        showSVMS2(w,b,eta,ll,mm,nw)
    end
else
    if n == 3
        showpointsSVM(u,v)
        if fail == 0
            offset = 10;
            C1 = [1 0 1]; % magenta
            plotplaneSVM(u,v,w,b,offset,C1)
            C2 = [0 0 1]; % blue
            plotplaneSVM(u,v,w,b+eta,offset,C2)
            C3 = [1,0,0]; % red
            plotplaneSVM(u,v,w,b-eta,offset,C3)
        end
        axis equal
%   axis([ll(1) mm(1) ll(2) mm(2)]);
        view([-1 -1 1]);
        xlabel('X','fontsize',14);ylabel('Y','fontsize',14);zlabel('Z',
            'fontsize',14);
        hold off
    end
end

```