**EECE 8395**

**Project 8**

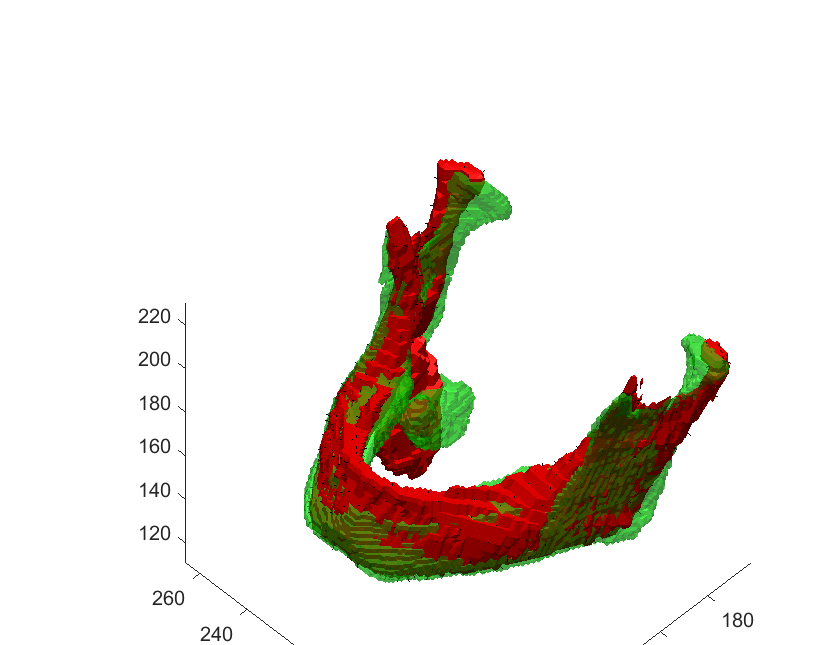
**Active Shape Model**

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Task 8c i

Screenshot of 3D result



Task 8c iii

Code for Createshapemodel

function pca=createshapemodel(d,w)

mn=mean(d,2);

V=d-mn;

T=V'\*V/size(V,2);

[eig\_vec,eig\_val] = eig(T);

eig\_val=sum(eig\_val);

[~,ind] = sort(eig\_val,'descend');

e=eig\_val(ind(1:end-1));

eig\_vec=eig\_vec(:,ind(1:end-1));

U=[];

for i=1:size(eig\_vec,2)

U(:,i)=V\*eig\_vec(:,i);

U(:,i)=U(:,i)/norm(U(:,i));

end

phi=(U'\*(w'\*w)\*U)\(U'\*(w'\*w));

pca=struct;

pca.e=e;

pca.U=U';

pca.mn=mn;

pca.w=w;

pca.phi=phi;