1):

X: A to P, 0 to max

Y: D to V, 0 to max

Z: L to R, 0 to max (ML)

C:\Users\McCormick\_Lab\Documents\CCF\_alignment\_Vickers\_Jan3021\allen\_maps\_gridAnnotations\P56\_Mouse\_annotation

annotation.raw, uint32 Windows

rotate around x axis (anterior to posterior):

X = x;

Y = y\*cos(theta) - z\*sin(theta);

Z = y\*sin(theta) + z\*cos(theta);

rotate around y axis (dorsal to ventral):

X = x\*cos(theta) + z\*sin(theta);

Y = y;

Z = z\*cos(theta) - x\*sin(theta);

rotate around z axis (left to right):

X = x\*cos(theta) - y\*sin(theta);

Y = x\*sin(theta) + y\*cos(theta);

Z = z;

So, to rotate 22.5 degrees to the left so that “dorsal view” is the same as in the A1V1M2 prep, do the following (using radians, where 22.5 degrees left = 337.5 degrees right = 5.89 radians

X = x;

Y = y\*cos(5.89) – z\*sin(5.89);

Z = y\*sin(5.89) + z\*cos(5.89);

2)

Rebin so that pixels are aligned into D to V columns (y axis) (use discretize.m)

[[Y](https://www.mathworks.com/help/matlab/ref/double.discretize.html#bunpi8p-Y),[E](https://www.mathworks.com/help/matlab/ref/double.discretize.html#bunpi8p-E)] = discretize([X](https://www.mathworks.com/help/matlab/ref/double.discretize.html#bunpi8p-X),[N](https://www.mathworks.com/help/matlab/ref/double.discretize.html#bunpi8p-N)) divides the data in X into N bins of uniform width, and also returns the bin edges E.