

You will probably be doing this activity in-class, from directions given by the instructor. If you are doing it on your own, then choose a point in the room that you are in to be the origin. Imagine that your right shoulder is a point in space, relative to that origin. Point your right arm in succession in each of the directions of the basis vectors adapted the various coordinate systems:

- $\{\hat{x}, \hat{y}, \hat{z}\}$  in rectangular coordinates.
- $\{\hat{s}, \hat{\phi}, \hat{z}\}$  in cylindrical coordinates.
- $\{\hat{r}, \hat{\theta}, \hat{\phi}\}$  in spherical coordinates.