Linear algebra can be used with stereovision to convert two dimensional coordinates in an image to a three dimensional point in real space. We want to create a matrix that by multiplied by a points’ coordinates on an image to find its position in 3D space. This matrix is known as the projection matrix, .

Where P is the projection matrix, K is the intrinsic matrix, and [r|t] is the extrinsic matrix, made up of the rotation matrix and the translation vector. The intrinsic matrix contains parameters inherent to the camera, like its focal length, while the extrinsic matrix refers to the pose and rotation of the camera when the image was taken.