

## Eigen Value Decomposition | Spectral Decomposition

Eigen vector ? - A vector that does not change direction under Linear Transform.

$$Ax = \lambda x \quad \text{just scaling.}$$

If something is invariant (a line / plane in this case) then it limits the behavior of the linear transform.

Rough → <sup>EIGEN VALUES</sup> ~~eigen vectors~~ kind of measure distortion induced by the ~~so~~ linear transform.  
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EIGEN VECTORS tell how that is oriented.