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Rodrigues' rotation formula

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Rodrigues' rotation formula gives a convenient way to write the general rotation matrix in R^3 .

If $[v_1, v_2, v_3]$ is a unit vector on the rotation axis, and θ is the rotation angle about that axis, then the rotation matrix is given by

$$I + \sin(\theta)A + (1 - \cos(\theta))A^2$$

where I is the identity matrix and

$$A = \begin{pmatrix} 0 & -v_3 & v_2 \\ v_3 & 0 & -v_1 \\ -v_2 & v_1 & 0 \end{pmatrix}$$

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