HW3.6. Find the axis and angle that would align two frames

Suppose R_1^0 and R_2^0 describe the orientation of frame 1 and frame 2, respectively, in the coordinates of frame 0. What is the smallest non-negative angle (in radians) through which frame 2 would have to rotate about some fixed axis in order to be aligned with frame 1, and what is that axis in the coordinates of frame 1?

Python

```
import numpy as np

R_1in0 = np.array([[0.99987197, 0.00475315,
-0.01527937], [-0.00490780, 0.99993695,
-0.01010016], [0.01523040, 0.01017386,
0.99983225]])
R_2in0 = np.array([[-0.64222839, 0.24937489,
0.72481367], [-0.74614420, 0.01315456,
-0.66565440], [-0.17553210, -0.96831768,
0.17762140]])
```

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$w^1 =$ matrix (rtol=0.01, atol=1e-08)

$\theta =$ number (rtol=0.01, atol=1e-08)

Save & Grade *Single attempt*

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Homework 3

Assessment overview

Total points: 23/23

Score: 80%

Question

Value: 2

History: 1 2 2 1 1 1 2 1 1

Awarded points: 2/2

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