**16720-B COMPUTER-VISION HOMEWORK**

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Q1.1

For

Therefore, proved.

Q1.2

Since the translation is in the x-axis, it can be reflected as:

Cross-product matrix can be written as:

Given that:

and:

We can compute the cross product, of the epipolar lines:

Hence the two epipolar lines are parallel.

1.3

Making omega the subject of the formula and treating this as a linear algebra problem, we get:

1.4

Therefore the fundamental matrix is a skew-symmetric matrix

QA picture containing graphical user interface

Description automatically generated

Text

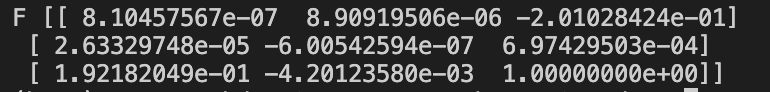
Description automatically generated

A picture containing graphical user interface

Description automatically generatedQ2.2

Text

Description automatically generated



Q3.1

Text

Description automatically generated

3.2

Graphical user interface, text

Description automatically generated

3.3

Text

Description automatically generated with medium confidence

Text

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Q4.1

A picture containing graphical user interface

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Text

Description automatically generated

Q4.2

Chart

Description automatically generatedDiagram

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Chart, scatter chart

Description automatically generatedChart

Description automatically generated

Text

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Q5.1

Text

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**NOTE:**

I think there is something incorrect in bundleAdjustment hence why I do not have an output.

**ACKNOWLEDGEMENTS:**

1. My friend from my lab Bassam Bikdash helped me (and served as office hours) for a bit of this assignment since I did not have access to the Office Hours due to personal circumstances highlighted to Prof Ramanan
2. <https://www.geeksforgeeks.org/how-to-generate-2-d-gaussian-array-using-numpy/> was used for Gaussian weighting portion of the epipolar correspondences