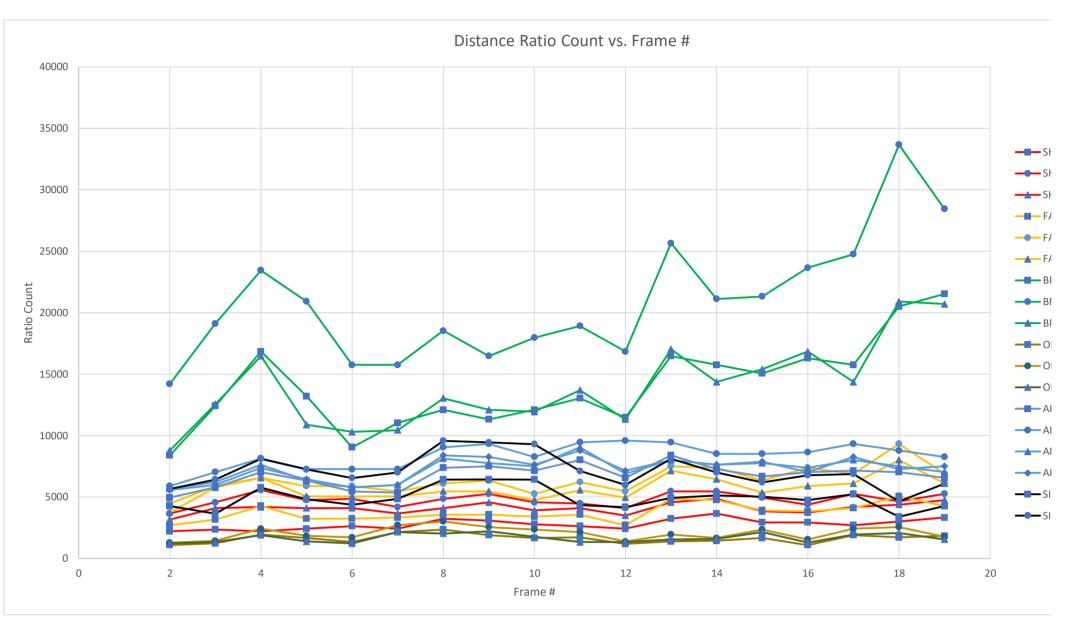
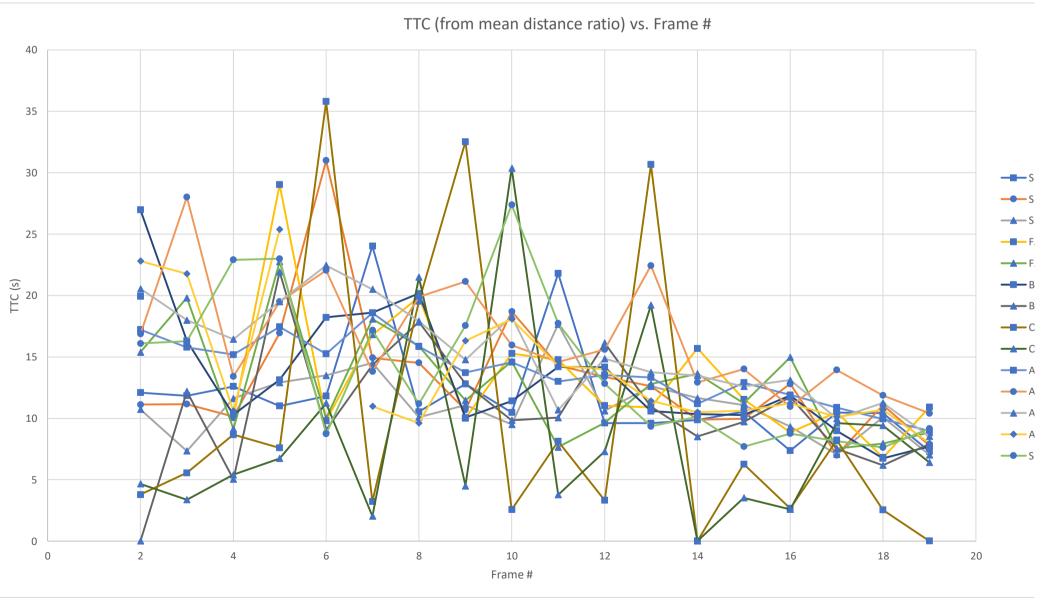
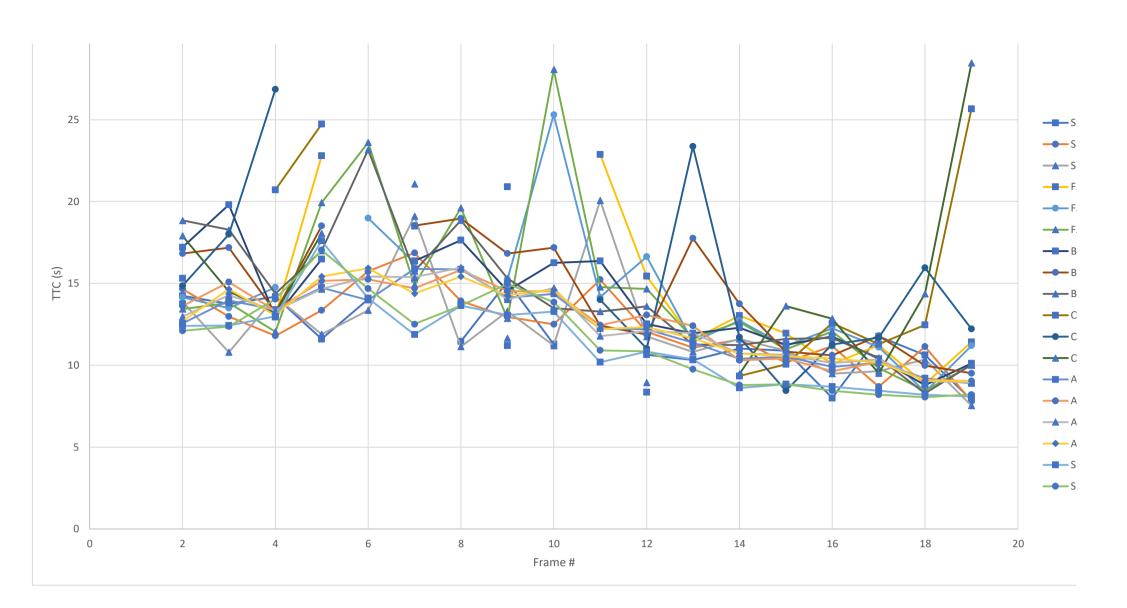
|                     |                           | Mean                    |            |                            |                |                    | Median     |                    |                    |
|---------------------|---------------------------|-------------------------|------------|----------------------------|----------------|--------------------|------------|--------------------|--------------------|
| Detector            | SHITOMASI                 | Descriptor              | BRISK      |                            |                | Avg Ratio          |            |                    |                    |
| Frame #             | No Of Ratios              | Avg Ratio               | TTC        |                            | Detector       | SHITOMAS           | •          |                    | BRISK              |
| 2                   |                           |                         |            | 0996<br>8362               | Frame #        | No Of Rati<br>2211 | Avg Ratio  | 1.00702            | TTC<br>14.2515     |
| 4                   |                           |                         |            | 6302<br>5894               | 1<br>2         |                    |            | 1.00702            | 13.7572            |
| 5                   | 2415                      |                         |            | 0036                       | 3              |                    |            | 1.00705            | 14.1861            |
| 6                   | 2628                      | 1.00847                 | 11         | 8048                       | 4              |                    |            | 1.00862            | 11.6               |
| 7                   |                           |                         |            | 4.027                      | 5              |                    |            | 1.00713            | 14.028             |
| 8                   | 3240                      |                         |            | 0.5365                     | 6              |                    |            | 1.00157            |                    |
| 9                   | 3081                      |                         |            | 2.7988                     | 7              |                    |            | 1.00873            | 11.4596            |
| 10<br>11            | 2775<br>2628              |                         |            | .0.471<br>:1.799           | 8<br>9         |                    |            | 1.00662<br>1.00886 | 15.1041<br>11.2894 |
| 12                  |                           |                         |            | 61463                      | 10             |                    |            | 1.00374            | 11.2054            |
| 13                  |                           |                         |            | 60122                      | 11             |                    |            | 1.0094             | 10.6403            |
| 14                  |                           |                         |            | 87101                      | 12             |                    |            | 1.00969            | 10.3187            |
| 15                  | 2926                      |                         |            | 0.5337                     | 13             |                    |            | 1.00908            | 11.0138            |
| 16                  | 2926                      |                         |            | 36015                      | 14             |                    |            | 1.00919            | 10.8858            |
| 17<br>18            | 2701<br>3003              |                         |            | ).4602<br>.0.421           | 15<br>16       |                    |            | 1.0125<br>1.0085   | 7.99882<br>11.7604 |
| 19                  | 3321                      |                         |            | 30344                      | 17             |                    |            | 1.0083             | 10.6212            |
| Detector            | SHITOMASI                 | Descriptor              | BRIEF      |                            | 18             |                    |            | 1.01268            | 7.88439            |
| Frame #             | No Of Ratios              | Avg Ratio               | TTC        |                            | Detector       | SHITOMAS           | Descriptor |                    | BRIEF              |
| 2                   |                           |                         |            | 1151                       | Frame #        | No Of Rati         | Avg Ratio  |                    | TTC                |
| 3                   |                           |                         |            | .1.153                     | 1              |                    |            | 1.00682            | 14.6612            |
| 4                   |                           |                         |            | 0.1472                     | 2              |                    |            | 1.00771            | 12.9719            |
| 5<br>6              | 4753<br>4851              |                         |            | 5.9368<br>50.992           | 3<br>4         |                    |            | 1.00847<br>1.00749 | 11.8049<br>13.3479 |
| 7                   |                           |                         |            | .9215                      | 5              |                    |            | 1.00636            | 15.7337            |
| 8                   | 4851                      |                         |            | .5089                      | 6              |                    |            | 1.00593            | 16.8615            |
| 9                   | 5253                      | 1.00937                 | 10         | ).6777                     | 7              | 4851               |            | 1.00718            | 13.9238            |
| 10                  | 4560                      |                         |            | 3.7001                     | 8              |                    |            | 1.00772            | 12.9487            |
| 11                  | 4465                      |                         |            | .4.315                     | 9              |                    |            | 1.008              | 12.504             |
| 12<br>13            | 4095<br>5460              |                         |            | 3.3808<br>3.6304           | 10<br>11       |                    |            | 1.00656<br>1.00831 | 15.2389<br>12.0367 |
| 14                  |                           |                         |            | 030 <del>4</del><br>).8833 | 12             |                    |            | 1.00831            | 11.0804            |
| 15                  | 4950                      |                         |            | 97128                      | 13             |                    |            | 1.00865            | 11.5636            |
| 16                  | 4371                      |                         |            | 8131                       | 14             |                    |            | 1.00984            | 10.1656            |
| 17                  | 5253                      | 1.01429                 | 6.9        | 99988                      | 15             | 4371               |            | 1.00895            | 11.1774            |
| 18                  | 4656                      |                         |            | 0871                       | 16             |                    |            | 1.0115             | 8.69767            |
| 19                  | 5253                      |                         |            | 79244                      | 17             |                    |            | 1.00898            | 11.1303            |
| Detector<br>Frame # | SHITOMASI<br>No Of Ratios | Descriptor<br>Avg Ratio | ORB<br>TTC |                            | 18<br>Detector | 5253<br>SHITOMAS   | Descriptor | 1.01281            | 7.80726<br>ORB     |
| 2                   | 3160                      | -                       |            | 0.7228                     | Frame #        | No Of Rati         | •          |                    | TTC                |
| 3                   |                           |                         |            | 34338                      | 1              |                    |            | 1.0072             | 13.889             |
| 4                   | 4186                      | 1.0086                  | 11         | 6248                       | 2              |                    |            | 1.00926            | 10.8013            |
| 5                   | 4095                      |                         |            | 9098                       | 3              |                    |            | 1.00705            | 14.1821            |
| 6                   | 4095                      |                         |            | 3.4908                     | 4              |                    |            | 1.00841            | 11.8915            |
| 7<br>8              | 3655<br>4095              |                         |            | .5077<br>.0.091            | 5<br>6         |                    |            | 1.00748<br>1.00524 | 13.3604<br>19.0943 |
| 9                   | 4560                      |                         |            | 0709                       | 7              |                    |            | 1.00324            | 11.1376            |
| 10                  | 3916                      |                         |            | 50031                      | 8              |                    |            | 1.00752            | 13.3032            |
| 11                  | 4095                      | 1.00566                 | 1          | .7.664                     | 9              | 3916               |            | 1.00893            | 11.2023            |
| 12                  |                           |                         |            | 0.6151                     | 10             |                    |            | 1.00498            | 20.0618            |
| 13                  |                           |                         |            | 2.6103                     | 11             |                    |            | 1.00851            | 11.7534            |
| 14                  |                           |                         |            | 6504                       | 12<br>13       |                    |            | 1.00925            | 10.8148            |
| 15<br>16            | 3828<br>3741              |                         |            | 0873<br>32407              | 13             |                    |            | 1.00862<br>1.00919 | 11.6034<br>10.8858 |
| 17                  | 4186                      |                         |            | 06009                      | 15             |                    |            | 1.01054            | 9.48797            |
| 18                  | 4371                      |                         |            | 0.0862                     | 16             |                    |            | 1.01037            | 9.64653            |
| 19                  | 4753                      | 1.01424                 | 7.0        | 02112                      | 17             |                    |            | 1.00965            | 10.3634            |
| Detector            | FAST                      | Descriptor              | BRISK      |                            | 18             |                    |            | 1.01327            | 7.53456            |
| Frame #             | No Of Ratios              | Avg Ratio               | TTC        |                            | Detector       | FAST               | Descriptor |                    | BRISK              |
| 2                   | 2701<br>3160              |                         | 19         | 0.9278                     | Frame #        | No Of Rati<br>2701 | Avg Ratio  | 1.00653            | TTC 15.3147        |
| 4                   |                           |                         | 10         | 0.0371                     | 1<br>2         |                    |            | 1.00653            | 19.914/            |
| 5                   | 3240                      |                         |            | 0.0248                     | 3              |                    |            | 1.00769            | 13.0039            |
| 6                   | 3240                      |                         |            | .8056                      | 4              |                    |            | 1.00439            | 22.7899            |
| 7                   |                           |                         |            | 8008                       | 5              |                    |            | 1                  |                    |
| 8                   |                           |                         |            | .8607                      | 6              |                    |            | 1.00656            | 15.2452            |
| 9                   |                           |                         |            | 0.0009                     | 7              |                    |            | 1.00162            | 14 10==            |
| 10<br>11            | 3403<br>3570              |                         |            | 5.2699<br>5.7682           | 8<br>9         |                    |            | 1.00893<br>1.00332 | 11.1975            |
| 11                  |                           |                         |            | 0334                       | 9<br>10        |                    |            | 1.00332            | 22.8737            |
| 13                  |                           |                         |            | 033 <del>4</del><br>).8959 | 11             |                    |            | 1.00437            | 15.4412            |
| 14                  |                           |                         |            | .6945                      | 12             |                    |            | 1.00865            | 11.5668            |
| 15                  | 3916                      | 1.00866                 | 11         | 5486                       | 13             | 4753               |            | 1.00768            | 13.0277            |
|                     |                           |                         |            |                            |                |                    |            |                    |                    |

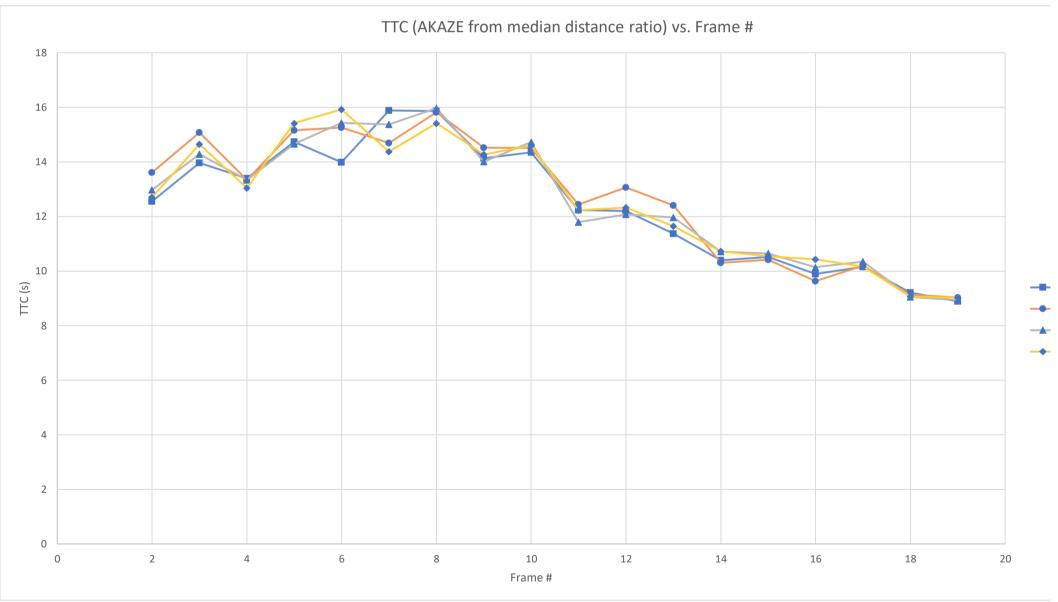






| 16   | 3828  | 1.01129   | 8.858  | 81 14  | 3916  | 1.008   | 37 11.9446   |
|--|---|---|--|--|---|---|--|
| 17   | 4095  | 1.00952   | 10.50  | 03 15  | 3828  | 1.009   | 93 10.0735   |
| 18   | 5050  |   | 6.803  |  |   | 1.00  |  |
|  |   |   |  |  |   |   |  |
| 19   | 4278  |   | 10.90  |  |   |   |  |
|  | FAST  | •   | BRIEF  | 18   |   |   |  |
| Frame #  | No Of Ratios  | Avg Ratio   | TTC  | Detector   | FAST  | Descriptor  | BRIEF  |
| 2  | 4465  | 1.00251   | 39.81  | 23 Frame #   | No Of Rati  | Avg Ratio   | TTC  |
| 3  | 5886  | 1.00716   | 13.97  | 11 1   | 4465  | 1.007   | 07 14.1514   |
| 4  | 6555  | 1.00799   | 12.52  |  |   |   |  |
|  |   |   |  |  |   |   |  |
| 5  | 5886  | 1.00326   | 30.71  |  |   |   |  |
| 6  | 5886  | 1.01259   | 7.944  | 63 4   | 5886  | 1.00  | 35   |
| 7  | 5460  | 1.0044  | 22.74  | 16 5   | 5886  | 1.005   | 27 18.9903   |
| 8  | 6105  | 1.00225   | 44.43  | 01 6   | 5460  | 1.006   | 14 16.2739   |
| 9  | 6328  | 1.00357   | 28.04  | 57 7   | 6105  | 1.002   | 95   |
| 10   | 5253  | 1.00575   | 17.40  |  |   |   |  |
|  |   |   |  |  |   |   |  |
| 11   | 6216  | 1.01307   | 7.653  |  |   | 1.003   |  |
| 12   | 5460  | 1.00533   | 18.7   |  |   | 1.007   |  |
| 13   | 7503  | 1.00807   | 12.39  | 43 11  | 5460  | 1.006   | 01 16.6385   |
| 14   | 7381  | 1.00712   | 14.03  | 96 12  | 7503  | 1.008   | 75 11.4231   |
| 15   | 6328  | 1.00734   | 13.6   | 32 13  | 7381  | 1.007   | 85 12.7336   |
| 16   | 7381  | 1.00635   | 15.74  |  |   |   |  |
|  |   |   |  |  |   |   |  |
| 17   | 6903  | 1.01099   | 9.096  |  |   | 1.008   |  |
| 18   | 9316  | 1.01185   | 8.440  |  |   | 1.0   |  |
| 19   | 6903  | 1.00964   | 10.37  | 32 17  | 9316  | 1.011   | 95 8.36974   |
| Detector   | FAST  | Descriptor  | ORB  | 18   | 6903  | 1.008   | 94 11.1887   |
| Frame #  | No Of Ratios  | Avg Ratio   | TTC  | Detector   | FAST  | Descriptor  | ORB  |
| 2  | 3741  | _   | 15.3   |  |   | Avg Ratio   | TTC  |
|  |   |   |  |  |   | •   |  |
| 3  | 5778  |   | 19.80  |  |   |   |  |
| 4  | 6555  | 1.01096   | 9.125  | 76 2   | 5778  | 1.007   | 24 13.8123   |
| 5  | 5050  | 1.0044  | 22.75  | 22 3   | 6555  | 1.00  | 83 12.054  |
| 6  | 5050  | 1.00999   | 10.00  | 53 4   | 5050  | 1.005   | 02 19.9276   |
| 7  | 5050  | 1.00553   | 18.08  |  |   | 1.004   |  |
|  |   |   |  |  |   |   |  |
| 8  | 5460  | 1.0063  | 15.86  |  |   | 1.006   |  |
| 9  | 5460  | 1.00873   | 11.45  |  |   | 1.00  |  |
| 10   | 4753  | 1.00683   | 14.6   | 45 8   | 5460  | 1.007   | 78 12.8588   |
| 11   | 5565  | 1.01306   | 7.657  | 19 9   | 4753  | 1.003   | 56 28.0573   |
| 12   | 4950  | 1.01037   | 9.646  |  | 5565  | 1.006   |  |
| 13   | 7140  | 1.00781   | 12.80  |  |   | 1.006   |  |
|  |   |   |  |  |   |   |  |
| 14   | 6441  | 1.00733   | 13.64  |  |   | 1.008   |  |
| 1 [  | E2E6  | 1 0000  | 11.23  | 02 12  | 6111  | 1 00  | 70 12 6522   |
| 15   | 5356  | 1.0089  | 11.20  | 92 13  | 6441  | 1.00  | 79 12.6532   |
| 16   | 5886  | 1.0089  | 14.97  |  |   | 1.009   |  |
| 16   | 5886  | 1.00668   | 14.97  | 89 14  | 5356  | 1.009   | 12 10.963  |
| 16<br>17   | 5886<br>6105  | 1.00668<br>1.01325  | 14.97<br>7.545   | 89 14<br>77 15   | 5356<br>5886  | 1.009<br>1.008  | 12 10.963<br>29 12.0606  |
| 16<br>17<br>18   | 5886<br>6105<br>8001  | 1.00668<br>1.01325<br>1.01259   | 14.97<br>7.545<br>7.940  | 89       14         77       15         26       16  | 5356<br>5886<br>6105  | 1.009<br>1.008<br>1.010   | 12 10.963<br>29 12.0606<br>17 9.83317  |
| 16<br>17<br>18<br>19   | 5886<br>6105<br>8001<br>6105  | 1.00668<br>1.01325<br>1.01259<br>1.0113   | 14.97<br>7.545<br>7.940<br>8.845   | 89       14         77       15         26       16         89       17  | 5356<br>5886<br>6105<br>8001  | 1.009<br>1.008<br>1.010<br>1.011  | 12 10.963<br>29 12.0606<br>17 9.83317<br>83 8.4558   |
| 16<br>17<br>18<br>19<br>Detector   | 5886<br>6105<br>8001<br>6105<br>BRISK   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor   | 14.97<br>7.545<br>7.940<br>8.845<br>BRISK  | 89 14<br>77 15<br>26 16<br>89 17   | 5356<br>5886<br>6105<br>8001<br>6105  | 1.009<br>1.008<br>1.010   | 12 10.963<br>29 12.0606<br>17 9.83317<br>83 8.4558<br>01 9.9932  |
| 16<br>17<br>18<br>19   | 5886<br>6105<br>8001<br>6105  | 1.00668<br>1.01325<br>1.01259<br>1.0113   | 14.97<br>7.545<br>7.940<br>8.845   | 89       14         77       15         26       16         89       17  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK   | 1.009<br>1.008<br>1.010<br>1.011<br>1.010<br>Descriptor   | 12 10.963<br>29 12.0606<br>17 9.83317<br>83 8.4558   |
| 16<br>17<br>18<br>19<br>Detector   | 5886<br>6105<br>8001<br>6105<br>BRISK   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor   | 14.97<br>7.545<br>7.940<br>8.845<br>BRISK  | 89 14<br>77 15<br>26 16<br>89 17<br>18<br>Detector   | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK   | 1.009<br>1.008<br>1.010<br>1.011<br>1.010   | 12 10.963<br>29 12.0606<br>17 9.83317<br>83 8.4558<br>01 9.9932  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371   | 14.97<br>7.545<br>7.940<br>8.845<br>BRISK<br>TTC<br>26.9   | 89 14 77 15 26 16 89 17 18 Detector 77 Frame #   | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati   | 1.009<br>1.008<br>1.010<br>1.011<br>1.010<br>Descriptor<br>Avg Ratio  | 12 10.963<br>29 12.0606<br>17 9.83317<br>83 8.4558<br>01 9.9932<br>BRISK<br>TTC  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613  | 14.97<br>7.545<br>7.940<br>8.845<br>BRISK<br>TTC<br>26.9   | 89 14 77 15 26 16 89 17 18 Detector 77 Frame #   | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati   | 1.009<br>1.008<br>1.010<br>1.011<br>1.010<br>Descriptor<br>Avg Ratio  | 12 10.963<br>29 12.0606<br>17 9.83317<br>83 8.4558<br>01 9.9932<br>BRISK<br>TTC<br>81 17.2044  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971   | 14.97<br>7.545<br>7.940<br>8.845<br>BRISK<br>TTC<br>26.9<br>16.3   | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402  | 1.009<br>1.008<br>1.010<br>1.011<br>1.010<br>Descriptor<br>Avg Ratio<br>1.005<br>1.005  | 12 10.963<br>29 12.0606<br>17 9.83317<br>83 8.4558<br>01 9.9932<br>BRISK<br>TTC<br>81 17.2044<br>05 19.8068  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4   | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971   | 14.97<br>7.545<br>7.940<br>8.845<br>BRISK<br>TTC<br>26.9<br>16.3<br>10.30<br>13.13   | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836   | 1.009<br>1.008<br>1.010<br>1.011<br>1.010<br>Descriptor<br>Avg Ratio<br>1.005<br>1.005  | 12 10.963<br>29 12.0606<br>17 9.83317<br>83 8.4558<br>01 9.9932<br>BRISK<br>TTC<br>81 17.2044<br>05 19.8068<br>73 12.933   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549   | 14.97<br>7.545<br>7.940<br>8.845<br>BRISK<br>TTC<br>26.9<br>16.3<br>10.30<br>13.13<br>18.22  | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203  | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio 1.005 1.005 1.007 1.006  | 12 10.963<br>29 12.0606<br>17 9.83317<br>83 8.4558<br>01 9.9932<br>BRISK<br>TTC<br>81 17.2044<br>05 19.8068<br>73 12.933<br>06 16.4899   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4   | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971   | 14.97<br>7.545<br>7.940<br>8.845<br>BRISK<br>TTC<br>26.9<br>16.3<br>10.30<br>13.13   | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203  | 1.009<br>1.008<br>1.010<br>1.011<br>1.010<br>Descriptor<br>Avg Ratio<br>1.005<br>1.005  | 12 10.963<br>29 12.0606<br>17 9.83317<br>83 8.4558<br>01 9.9932<br>BRISK<br>TTC<br>81 17.2044<br>05 19.8068<br>73 12.933<br>06 16.4899   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549   | 14.97<br>7.545<br>7.940<br>8.845<br>BRISK<br>TTC<br>26.9<br>16.3<br>10.30<br>13.13<br>18.22  | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045  | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio 1.005 1.005 1.007 1.006  | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549<br>1.00538<br>1.00496   | 14.97<br>7.545<br>7.940<br>8.845<br>BRISK<br>TTC<br>26.9<br>16.3<br>10.30<br>13.13<br>18.22<br>18.60<br>20.16  | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026   | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio 1.005 1.005 1.007 1.006 1.003  | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8   | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994  | 14.97 7.545 7.940 8.845 BRISK TTC 26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0   | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090  | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.005   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876   | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41  | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8   | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325   | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.003 1.006 1.005 1.006   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705   | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19  | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 7 74 6 59 7 48 8 11  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090  | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00706  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.19  | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041   | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.006 1.006   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705   | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19  | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041   | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00706<br>1.00706   | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.16 10.59  | 89 14 77 15 26 16 89 17 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476  | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.006 1.006 1.006   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00706<br>1.00706<br>1.00944<br>1.00967   | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33  | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471   | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.006 1.007 1.006   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00706<br>1.00706<br>1.00944<br>1.00967<br>1.00973  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.19 14.16 10.59 10.33 10.27  | 89 14 77 15 26 16 89 17 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753  | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.006 1.006 1.006 1.008   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00706<br>1.00904<br>1.00967<br>1.00967<br>1.00973<br>1.00844   | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8   | 89 14 77 15 26 16 89 17 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051   | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.006 1.007 1.008 1.008 1.008   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00706<br>1.00967<br>1.00967<br>1.00967<br>1.00973<br>1.00844<br>1.01114   | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977   | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14 37 15  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290  | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.007 1.008 1.008 1.008 1.008 1.008   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502  | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00706<br>1.00967<br>1.00967<br>1.00967<br>1.00973<br>1.00844<br>1.01114<br>1.01483  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742   | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14 37 15  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752   | 1.009 1.008 1.010 1.011 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.008 1.008 1.008   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00706<br>1.00967<br>1.00967<br>1.00967<br>1.00973<br>1.00844<br>1.01114   | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977   | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14 37 15  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752   | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.007 1.008 1.008 1.008 1.008 1.008   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528                               | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00706<br>1.00944<br>1.00967<br>1.00973<br>1.00844<br>1.01114<br>1.01483<br>1.01297   | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712   | 89 14 77 15 26 16 89 17 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14 37 15 43 16 99 17  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502  | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.009 1.011   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528                               | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00706<br>1.00967<br>1.00967<br>1.00967<br>1.00973<br>1.00844<br>1.01114<br>1.01483<br>1.01297   | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF   | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 74 15 37 15 43 16 99 17  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528   | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.009 1.011 1.009   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector  | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Ratios      | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00706<br>1.00967<br>1.00967<br>1.00967<br>1.00973<br>1.00844<br>1.01114<br>1.01483<br>1.01297<br>Descriptor<br>Avg Ratio  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC   | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14 37 15 43 99 17 18 Detector   | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK  | 1.009 1.008 1.010 1.011 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor  | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Ratios      | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00761 1.00549 1.00538 1.00496 1.00994 1.00876 1.00705 1.00706 1.00706 1.00944 1.00967 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC 51.07   | 89 14 77 15 26 16 89 17 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 37 15 43 16 99 17 18 Detector 95 Frame #   | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati  | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Ratios      | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00761 1.00549 1.00538 1.00496 1.00994 1.00876 1.00705 1.00706 1.00706 1.00944 1.00967 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196 1.00651  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35  | 89 14 77 15 26 16 89 17 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14 37 15 43 16 99 17 18 Detector 95 Frame # 78  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati<br>14196   | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.007 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  1.005   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 11 16.3721 67 17.634 87 14.5557 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Ratios      | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00761 1.00549 1.00538 1.00496 1.00994 1.00876 1.00705 1.00706 1.00706 1.00944 1.00967 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC 51.07   | 89 14 77 15 26 16 89 17 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14 37 15 43 16 99 17 18 Detector 95 Frame # 78  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati<br>14196   | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 11 16.3721 67 17.634 87 14.5557 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Ratios<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>11325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Ratios      | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00761 1.00549 1.00538 1.00496 1.00994 1.00876 1.00705 1.00706 1.00706 1.00944 1.00967 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196 1.00651  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35  | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14 37 15 43 99 17 18 Detector 95 Frame # 78 89 2  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati<br>14196<br>19109  | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.007 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  1.005   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288 82 17.1857   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886 6105 8001 6105 BRISK No Of Ratios  8385 12402 16836 13203 9045 11026 12090 11325 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Ratios  | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00971 1.00761 1.00549 1.00538 1.00496 1.00994 1.00876 1.00705 1.00706 1.00973 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196 1.00651 1.00887 1.00887 1.00469  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35 11.26 21.29                                    | 89 14 77 15 26 16 89 17 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 37 15 43 16 99 17 18 Detector 95 Frame # 78 1 89 2 95 3  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati<br>14196<br>19109<br>23436   | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  1.005 1.005 1.009 1.011 1.009 1.005 1.005 1.005 1.005 1.005 1.005 1.005   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288 82 17.1857 56 13.2321  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886 6105 8001 6105 BRISK No Of Ratios  8385 12402 16836 13203 9045 11026 12090 11325 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Ratios  14196 19109 23436 20910 15753   | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00761 1.00549 1.00538 1.00496 1.00994 1.00876 1.00705 1.00706 1.00944 1.00967 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196 1.00469 1.00425  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35 11.26 21.29 23.52                                    | 89 14 77 15 26 16 89 17  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati<br>14196<br>19109<br>23436<br>20910  | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  1.005 1.005 1.007 1.008 1.009 1.011 1.009 1.011 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005                               | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288 82 17.1857 56 13.2321 54 18.5149   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886 6105 8001 6105 BRISK No Of Ratios  8385 12402 16836 13203 9045 11026 12090 11325 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Ratios  14196 19109 23436 20910 15753 15753   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00705<br>1.00706<br>1.00967<br>1.00967<br>1.00967<br>1.00973<br>1.00844<br>1.01114<br>1.01483<br>1.01297<br>Descriptor<br>Avg Ratio<br>1.00469<br>1.00469<br>1.00425<br>1.00487 | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35 11.26 21.29 23.52                              | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14 37 15 43 99 17 18 Detector 95 Frame # 78 89 95 59 22   | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati<br>14196<br>19109<br>23436<br>20910<br>15753   | 1.009 1.008 1.010 1.011 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  1.005 1.005 1.006 1.007 1.008 1.009 1.011 1.009 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005                   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288 82 17.1857 56 13.2321 54 18.5149   |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886 6105 8001 6105 BRISK No Of Ratios  8385 12402 16836 13203 9045 11026 12090 11325 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Ratios  14196 19109 23436 20910 15753 15753 15753 15753 18528                         | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00971 1.00761 1.00549 1.00538 1.00496 1.00994 1.00876 1.00705 1.00706 1.00944 1.00967 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196 1.00651 1.00887 1.00469 1.00425 1.00487 1.00316  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35 11.26 21.29 23.52 20.5 31.63                   | 89 14 77 15 26 16 89 17 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 37 15 43 16 99 17 18 Detector 95 Frame # 78 1 89 2 95 3 59 4 22 5 61 6   | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati<br>14196<br>19109<br>23436<br>20910<br>15753<br>15753  | 1.009 1.008 1.010 1.011 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.006 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  1.005 1.005 1.005 1.005 1.009 1.011 1.009 1.001 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288 89 10.1145 BRIEF TTC 94 16.8288 82 17.1857 56 13.2321 54 18.5149 78  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886 6105 8001 6105 BRISK No Of Ratios  8385 12402 16836 13203 9045 11026 12090 11325 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Ratios  14196 19109 23436 20910 15753 15753   | 1.00668<br>1.01325<br>1.01259<br>1.0113<br>Descriptor<br>Avg Ratio<br>1.00371<br>1.00613<br>1.00971<br>1.00761<br>1.00549<br>1.00538<br>1.00496<br>1.00994<br>1.00876<br>1.00705<br>1.00705<br>1.00706<br>1.00967<br>1.00967<br>1.00967<br>1.00973<br>1.00844<br>1.01114<br>1.01483<br>1.01297<br>Descriptor<br>Avg Ratio<br>1.00469<br>1.00469<br>1.00425<br>1.00487 | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35 11.26 21.29 23.52                              | 89 14 77 15 26 16 89 17 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 37 15 43 16 99 17 18 Detector 95 Frame # 78 1 89 2 95 3 59 4 22 5 61 6   | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13325<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati<br>14196<br>19109<br>23436<br>20910<br>15753<br>15753  | 1.009 1.008 1.010 1.011 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  1.005 1.005 1.006 1.007 1.008 1.009 1.011 1.009 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005                   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288 89 10.1145 BRIEF TTC 94 16.8288 82 17.1857 56 13.2321 54 18.5149 78  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886 6105 8001 6105 BRISK No Of Ratios  8385 12402 16836 13203 9045 11026 12090 11325 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Ratios  14196 19109 23436 20910 15753 15753 15753 15753 18528                         | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00971 1.00761 1.00549 1.00538 1.00496 1.00994 1.00876 1.00705 1.00706 1.00944 1.00967 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196 1.00651 1.00887 1.00469 1.00425 1.00487 1.00316  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35 11.26 21.29 23.52 20.5 31.63                   | 89 14 77 15 26 16 89 17  | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati<br>14196<br>19109<br>23436<br>20910<br>15753<br>15753<br>15753<br>15753<br>15753   | 1.009 1.008 1.010 1.011 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.006 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  1.005 1.005 1.005 1.005 1.009 1.011 1.009 1.001 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288 89 10.1145 BRIEF TTC 94 16.8288 82 17.1857 56 13.2321 54 18.5302 27 18.9604  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886 6105 8001 6105 BRISK No Of Ratios  8385 12402 16836 13203 9045 11026 12090 11325 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Ratios  14196 19109 23436 20910 15753 18528 16471 17955                               | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00971 1.00761 1.00549 1.00538 1.00496 1.00994 1.00705 1.00705 1.00706 1.00973 1.00967 1.00967 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196 1.00651 1.00887 1.00469 1.00425 1.00487 1.00474 1.00559  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35 11.26 21.29 23.52 20.5 31.63 21.11 17.90       | 89 14 77 15 26 16 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 7 15 33 14 37 15 43 16 99 17 18 Detector 95 Frame # 78 89 95 59 22 61 14 23 88   | 5356 5886 6105 8001 6105 BRISK No Of Rati 8385 12402 16836 13203 9045 11026 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Rati 14196 19109 23436 19109 23436 20910 15753 15753 15753 15753 18528  | 1.009 1.008 1.010 1.011 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288 82 17.1857 56 13.2321 54 18.5149 78 54 18.5302 27 18.9604 94 16.826  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886 6105 8001 6105 BRISK No Of Ratios  8385 12402 16836 13203 9045 11026 12090 11325 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Ratios  14196 19109 23436 20910 15753 15753 15753 18528 16471 17955 18914             | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00971 1.00761 1.00549 1.00538 1.00496 1.00994 1.00876 1.00705 1.00706 1.00944 1.00967 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196 1.00451 1.00887 1.00469 1.00425 1.00487 1.00316 1.00474 1.00559 1.00877  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35 11.26 21.29 23.52 20.5 31.63 21.11 17.90 11.40 | 89 14 77 15 26 16 89 17 89 17 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 7 48 8 11 9 33 10 04 11 82 12 88 13 37 15 43 16 99 17 18 Detector 95 Frame # 78 1 89 2 95 3 59 4 22 5 61 1 4 7 23 8 82 9   | 5356 5886 6105 8001 6105 BRISK No Of Rati 8385 12402 16836 13203 9045 11026 12090 13325 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Rati 14196 19109 23436 20910 15753 15753 18528 16471 17955  | 1.009 1.008 1.010 1.011 1.010 1.011 1.010 1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.009 1.011 1.009 1.011 1.009 1.011 1.009 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 15 16.257 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288 89 10.1145 |
| 16 17 18 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 19 10 11 11 12 13 14 15 16 17 18 19 19 10 11 11 12 13 14 15 16 17 18 19 19 10 11 11 12 | 5886 6105 8001 6105 BRISK No Of Ratios  8385 12402 16836 13203 9045 11026 12090 11325 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Ratios  14196 19109 23436 20910 15753 15753 15753 15753 18528 16471 17955 18914 16836 | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00761 1.00549 1.00538 1.00496 1.00994 1.00876 1.00705 1.00706 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196 1.00451 1.00887 1.00469 1.00425 1.00474 1.00559 1.00877 1.00609  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35 11.26 21.29 23.52 20.5 31.63 21.11 17.90 11.40 16.40 | 89 14 77 15 26 16 89 17 27 18 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14 37 15 43 16 99 17 18 Detector 95 Frame # 78 89 95 59 22 61 14 23 88 29 72   | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati<br>14196<br>19109<br>23436<br>20910<br>15753<br>15753<br>15753<br>15753<br>15753<br>15753<br>15753<br>18528<br>16471<br>17955<br>18914 | 1.009 1.008 1.010 1.011 1.010 Descriptor Avg Ratio  1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.009 1.011 1.009 Descriptor Avg Ratio  1.005       | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 19 11 16.3721 67 17.634 87 14.5557 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288 89 10.1145 BRIEF TTC 94 16.8288 82 17.1857 56 13.2321 54 18.5302 27 18.9604 94 16.826 82 17.1875 05 12.4162  |
| 16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #   | 5886 6105 8001 6105 BRISK No Of Ratios  8385 12402 16836 13203 9045 11026 12090 11325 12090 13041 11476 16471 15753 15051 16290 15752 20502 21528 BRISK No Of Ratios  14196 19109 23436 20910 15753 15753 15753 18528 16471 17955 18914             | 1.00668 1.01325 1.01259 1.0113 Descriptor Avg Ratio 1.00371 1.00613 1.00971 1.00761 1.00549 1.00538 1.00496 1.00994 1.00876 1.00705 1.00706 1.00944 1.00967 1.00973 1.00844 1.01114 1.01483 1.01297 Descriptor Avg Ratio 1.00196 1.00451 1.00887 1.00469 1.00425 1.00487 1.00316 1.00474 1.00559 1.00877  | 14.97 7.545 7.940 8.845 BRISK TTC  26.9 16.3 10.30 13.13 18.22 18.60 20.16 10.0 11.41 14.19 14.16 10.59 10.33 10.27 11.8 8.977 6.742 7.712 BRIEF TTC  51.07 15.35 11.26 21.29 23.52 20.5 31.63 21.11 17.90 11.40 | 89 14 77 15 26 16 89 17 28 Detector 77 Frame # 14 1 17 2 92 3 28 4 05 5 74 6 59 7 48 8 11 9 33 10 04 11 82 12 88 13 53 14 37 15 43 99 17 18 Detector 95 Frame # 78 89 95 78 89 95 79 18 Detector 95 Frame # 78 89 95 78 89 95 78 89 95 78 89 95 78 89 95 78 89 95 78 89 95 78 89 96 78 89 97 18 89 97 18 89 97 18 89 97 18 89 97 18 89 97 18 89 97 18 89 97 18 89 98 18 89 99 17 18 89 90 17 18 89 90 17 18 89 90 17 18 89 90 17 18 89 90 17 18 80 18 80 90 90 17 91 80 91 91 91 91 91 91 91 91 91 91 91 91 91 | 5356<br>5886<br>6105<br>8001<br>6105<br>BRISK<br>No Of Rati<br>8385<br>12402<br>16836<br>13203<br>9045<br>11026<br>12090<br>13041<br>11476<br>16471<br>15753<br>15051<br>16290<br>15752<br>20502<br>21528<br>BRISK<br>No Of Rati<br>14196<br>19109<br>23436<br>20910<br>15753<br>15753<br>15753<br>15753<br>15753<br>15753<br>15753<br>18528<br>16471<br>17955<br>18914 | 1.009 1.008 1.010 1.011 1.010 1.011 1.010 1.005 1.005 1.006 1.006 1.006 1.006 1.006 1.008 1.008 1.008 1.008 1.009 1.011 1.009 1.011 1.009 1.011 1.009 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005 1.005   | 12 10.963 29 12.0606 17 9.83317 83 8.4558 01 9.9932 BRISK TTC 81 17.2044 05 19.8068 73 12.933 06 16.4899 11 16.3721 67 17.634 87 14.5557 11 16.3706 98 12.5273 37 11.9532 14 12.2858 88 11.2551 85 11.7668 62 10.3952 38 8.78608 89 10.1145 BRIEF TTC 94 16.8288 89 10.1145 BRIEF TTC 94 16.8288 82 17.1857 56 13.2321 54 18.5302 27 18.9604 94 16.826 82 17.1875 05 12.4162   |





| 14<br>15   |  |  |   |  |  |                       |   |  |
|--|--|--|---|--|--|-----------------------|---|--|
|  | 21115  | 1.0043   | 23.2777   | 12   | 25651  |                       | 1.00563   | 17.758   |
|  | 21321  | 1.00884  |   | 13   | 21115  |                       | 1.00727   | 13.7461  |
| 16   | 23653  | 1.00847  |   | 14   | 21321  |                       | 1.00923   | 10.8388  |
| 17   | 24752  | 1.00874  |   | 15   | 23653  |                       | 1.00943   | 10.6056  |
| 18   | 33669  | 1.00874  |   | 16   | 24752  |                       | 1.00343   | 11.8015  |
| 19   | 28441  | 1.00823  |   | 17   | 33669  |                       | 1.01002   | 9.98468  |
|  |  |  |   |  |  |                       |   |  |
|  | BRISK  | Descriptor   | ORB   | 18   | 28441  |                       | 1.01051   | 9.51379  |
| Frame #  | No Of Ratios   | Avg Ratio  | TTC   | Detector   |  | Descriptor            |   | ORB  |
| 2  | 8778   | 31.3814  |   | Frame #  | No Of Rati   | Avg Ratio             |   | TTC  |
| 3  | 12560  | 1.0082   |   | 1  | 8778   |                       | 1.00531   | 18.8429  |
| 4  | 16471  | 1.01984  | 5.04094   | 2  | 12560  |                       | 1.00547   | 18.274   |
| 5  | 10878  | 1.00456  | 21.9289   | 3  | 16471  |                       | 1.00696   | 14.3675  |
| 6  | 10296  | 1.01103  | 9.06516   | 4  | 10878  |                       | 1.00589   | 16.9895  |
| 7  | 10440  | 1.00698  | 14.3257   | 5  | 10296  |                       | 1.00432   | 23.1621  |
| 8  | 13041  | 1.0056   | 17.8433   | 6  | 10440  |                       | 1.00635   | 15.7483  |
| 9  | 12090  | 1.00779  |   | 7  | 13041  |                       | 1.00531   | 18.8443  |
| 10   | 11935  | 1.01017  |   | 8  | 12090  |                       | 1.00654   | 15.3018  |
| 11   | 13695  | 1.00994  |   | 9  | 11935  |                       | 1.00742   | 13.4793  |
| 12   | 11325  | 1.00554  |   | 10   | 13695  |                       | 1.00753   | 13.276   |
|  |  |  |   |  |  |                       |   |  |
| 13   | 17020  | 1.00912  |   | 11   | 11325  |                       | 1.00735   | 13.6047  |
| 14   | 14365  | 1.01174  |   | 12   | 17020  |                       | 1.00888   | 11.2588  |
| 15   | 15400  | 1.01029  |   | 13   | 14365  |                       | 1.00891   | 11.221   |
| 16   | 16836  | 1.00852  | 11.7363   | 14   | 15400  |                       | 1.00862   | 11.6022  |
| 17   | 14364  | 1.01331  | 7.51097   | 15   | 16836  |                       | 1.00857   | 11.6642  |
| 18   | 20909  | 1.01617  | 6.18539   | 16   | 14364  |                       | 1.00956   | 10.4611  |
| 19   | 20706  | 1.01263  |   | 17   | 20909  |                       | 1.01207   | 8.28566  |
| Detector   | ORB  | Descriptor   | BRISK   | 18   | 20706  |                       | 1.00996   | 10.043   |
| Frame #  | No Of Ratios   | Avg Ratio  | TTC   | Detector   |  | Descriptor            |   | BRISK  |
| 2  | 1081   | 1.02638  |   | Frame #  | No Of Rati   |                       |   | TTC  |
| 3  | 1225   | 1.01799  |   | 1  | 1081   | AVE NATIO             | 1.00727   | 13.7589  |
|  |  |  |   |  |  |                       | 1.00727   | 13.7363  |
| 4  | 1953   | 1.01154  |   | 2  | 1225   |                       |   | 20.7452  |
| 5  | 1653   | 1.01317  |   | 3  | 1953   |                       |   |  |
| 6  | 1325   | 1.00279  |   | 4  | 1653   |                       | 1.00404   | 24.7265  |
| 7  | 2144   | 1.03106  | 3.21937   | 5  | 1325   |                       | 1   |  |
| 8  | 2346   | 1.00512  | 19.5216   | 6  | 2144   |                       | 1.00541   | 18.4947  |
| 9  | 1891   | 1.00307  | 32.5291   | 7  | 2346   |                       | 1   |  |
| 10   | 1653   | 1.0389   | 2.57091   | 8  | 1891   |                       | 1.00478   | 20.9046  |
| 11   | 1711   | 1.0123   | 8.13095   | 9  | 1653   |                       | 1   |  |
| 12   | 1176   | 1.03019  |   | 10   | 1711   |                       | 1   |  |
| 13   | 1378   | 1.00326  |   | 11   | 1176   |                       | 1.01197   | 8.35181  |
| 14   | 1431   | 14.2233  |   | 12   | 1378   |                       | 1   | 0.00101  |
| 15   | 1653   | 1.01595  |   | 13   | 1431   |                       | 1.0107  | 9.34426  |
| 16   |  |  |   |  |  |                       |   |  |
|  | 1080   | 1.03746<br>1.01215   |   | 14   | 1653   |                       | 1.00994   | 10.0575  |
| 17   |  | 1 01715  | 8.2302  |  |  |                       |   | 12.5669  |
| 18   | 1890   |  |   | 15   | 1080   |                       | 1.00796   |  |
|  | 1710   | 1.03938  | 2.53927   | 16   | 1890   |                       | 1.00886   | 11.2863  |
| 19   | 1710<br>1829   | 1.03938<br>77.9308   | 2.53927<br>0.00129987   | 16<br>17   | 1890<br>1710   |                       | 1.00886<br>1.00802  | 11.2863<br>12.4705   |
| 19<br>Detector   | 1710<br>1829<br>ORB  | 1.03938<br>77.9308<br>Descriptor   | 2.53927<br>0.00129987<br>BRIEF  | 16<br>17<br>18   | 1890<br>1710<br>1829   |                       | 1.00886<br>1.00802<br>1.0039  | 11.2863<br>12.4705<br>25.6678  |
| 19<br>Detector   | 1710<br>1829   | 1.03938<br>77.9308   | 2.53927<br>0.00129987   | 16<br>17   | 1890<br>1710<br>1829   | Descriptor            | 1.00886<br>1.00802<br>1.0039  | 11.2863<br>12.4705   |
| 19<br>Detector   | 1710<br>1829<br>ORB  | 1.03938<br>77.9308<br>Descriptor   | 2.53927<br>0.00129987<br>BRIEF<br>TTC   | 16<br>17<br>18   | 1890<br>1710<br>1829   | •                     | 1.00886<br>1.00802<br>1.0039  | 11.2863<br>12.4705<br>25.6678  |
| 19<br>Detector<br>Frame #  | 1710<br>1829<br>ORB<br>No Of Ratios  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio  | 2.53927<br>0.00129987<br>BRIEF<br>TTC<br>-5.00308   | 16<br>17<br>18<br>Detector   | 1890<br>1710<br>1829<br>ORB  | •                     | 1.00886<br>1.00802<br>1.0039  | 11.2863<br>12.4705<br>25.6678<br>BRIEF   |
| 19<br>Detector<br>Frame #<br>2   | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012  | 2.53927<br>0.00129987<br>BRIEF<br>TTC<br>-5.00308<br>-19.8156   | 16<br>17<br>18<br>Detector<br>Frame #  | 1890<br>1710<br>1829<br>ORB<br>No Of Rati  | •                     | 1.00886<br>1.00802<br>1.0039  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC  |
| 19<br>Detector<br>Frame #<br>2<br>3  | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953  | 2.53927<br>0.00129987<br>BRIEF<br>TTC<br>-5.00308<br>-19.8156<br>-12.9748   | 16<br>17<br>18<br>Detector<br>Frame #<br>1   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587   |
| 19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5  | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807  | 2.53927<br>0.00129987<br>BRIEF<br>TTC<br>-5.00308<br>-19.8156<br>-12.9748<br>-16.148  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2  | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032  |
| 19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6   | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029  | 2.53927<br>0.00129987<br>BRIEF<br>TTC<br>-5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032  |
| 19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7  | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608  | 2.53927<br>0.00129987<br>BRIEF<br>TTC<br>-5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4  | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032  |
| 19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8                                       | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104   | 2.53927<br>0.00129987<br>BRIEF<br>TTC<br>-5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274<br>1.00263   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032  |
| 19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9                                  | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308 -19.8156 -12.9748 -16.148 -6.67954 -8.06963 -11.1606 -30.8224   | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6  | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274<br>1.00263<br>1.00097  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032  |
| 19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9                                  | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.990568   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308 -19.8156 -12.9748 -16.148 -6.67954 -8.06963 -11.1606 -30.8224 -10.6026  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032  |
| 19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11                      | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.990568<br>0.98654  | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308 -19.8156 -12.9748 -16.148 -6.67954 -8.06963 -11.1606 -30.8224 -10.6026 -7.4293  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8  | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547   |
| 19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12                | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.990568<br>0.98654<br>1.00084   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308 -19.8156 -12.9748 -16.148 -6.67954 -8.06963 -11.1606 -30.8224 -10.6026 -7.4293 119.756  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547   |
| 19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13          | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.990568<br>0.98654<br>1.00084<br>0.979959   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547   |
| 19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13          | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.990568<br>0.98654<br>1.00084<br>0.979959<br>0.996387   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308 -19.8156 -12.9748 -16.148 -6.67954 -8.06963 -11.1606 -30.8224 -10.6026 -7.4293 119.756 -4.98985 -27.6762  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588  |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15   | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.990568<br>0.98654<br>1.00084<br>0.979959<br>0.996387<br>0.991278   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00428  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981   |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.990568<br>0.98654<br>1.00084<br>0.979959<br>0.996387   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588  |
| 19 Detector Frame # 2 3 4 5 6 7 8 9 10 11 12 13 14 15  | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.990568<br>0.98654<br>1.00084<br>0.979959<br>0.996387<br>0.991278   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00428  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981   |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16  | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99658<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.99995  | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00428<br>1.00855<br>1.01184  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831  |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17                                       | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414  | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99658<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.99995  | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662   |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19                                 | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769                        | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99658<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.99995<br>0.998682<br>0.989485<br>0.983406  | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618  | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555  | •                     | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547   |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector                        | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769                        | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99658<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.9995<br>0.998682<br>0.989485<br>0.983406<br>Descriptor   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618<br>ORB   | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769  | Avg Ratio             | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627<br>1.00819   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547<br>12.215   |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector Frame #                | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB                 | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99654<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.99995<br>0.998682<br>0.989485<br>0.983406<br>Descriptor<br>Avg Ratio   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618<br>ORB   | 16<br>17<br>18<br>Detector<br>Frame #<br>1<br>2<br>3<br>4<br>5<br>6<br>7<br>8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>Detector   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB   | Avg Ratio  Descriptor | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627<br>1.00819   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547<br>12.215<br>ORB  |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector Frame #                | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Ratios | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99654<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.99995<br>0.998682<br>0.989485<br>0.983406<br>Descriptor<br>Avg Ratio<br>1.02146  | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618<br>ORB<br>TTC  4.66076   | 16 17 18 Detector Frame #  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 Detector Frame #   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB   | Avg Ratio  Descriptor | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627<br>1.00819   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547<br>12.215<br>ORB<br>TTC   |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector Frame # 2 3            | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Ratios | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99658<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.9995<br>0.996387<br>0.991278<br>0.9995<br>0.998682<br>0.989485<br>0.989485<br>0.983406<br>Descriptor<br>Avg Ratio<br>1.02146<br>1.02969                                | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618<br>ORB<br>TTC  4.66076<br>3.36855  | 16 17 18 Detector Frame #  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 Detector Frame # 1   | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Rati<br>1225   | Avg Ratio  Descriptor | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627<br>1.00819   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547<br>12.215<br>ORB<br>TTC<br>17.9039                                  |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector Frame #  2 3 4         | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Ratios | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99654<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.99995<br>0.998682<br>0.989485<br>0.989485<br>0.983406<br>Descriptor<br>Avg Ratio<br>1.02146<br>1.02969<br>1.0185   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618<br>ORB<br>TTC  4.66076<br>3.36855<br>5.40636   | 16 17 18 Detector Frame #  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 Detector Frame #  1 2  | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Rati<br>1225<br>1326                                 | Avg Ratio  Descriptor | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627<br>1.00819  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547<br>12.215<br>ORB<br>TTC<br>17.9039<br>14.5115                       |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector Frame #  2 3 4 5       | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Ratios | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99654<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.99995<br>0.998682<br>0.989485<br>0.983406<br>Descriptor<br>Avg Ratio<br>1.02146<br>1.02969<br>1.0185<br>1.01484  | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618<br>ORB<br>TTC  4.66076<br>3.36855<br>5.40636<br>6.73667  | 16 17 18 Detector Frame #  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 Detector Frame #  1 2 3  | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Rati<br>1225<br>1326<br>1891                         | Avg Ratio  Descriptor | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627<br>1.00819   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547<br>12.215<br>ORB<br>TTC<br>17.9039<br>14.5115<br>13.1875            |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector Frame #  2 3 4         | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Ratios | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99654<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.99995<br>0.998682<br>0.989485<br>0.989485<br>0.983406<br>Descriptor<br>Avg Ratio<br>1.02146<br>1.02969<br>1.0185   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618<br>ORB<br>TTC  4.66076<br>3.36855<br>5.40636<br>6.73667  | 16 17 18 Detector Frame #  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 Detector Frame #  1 2  | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Rati<br>1225<br>1326                                 | Avg Ratio  Descriptor | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627<br>1.00819  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547<br>12.215<br>ORB<br>TTC<br>17.9039<br>14.5115                       |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector Frame #  2 3 4 5       | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Ratios | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99654<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.99995<br>0.998682<br>0.989485<br>0.983406<br>Descriptor<br>Avg Ratio<br>1.02146<br>1.02969<br>1.0185<br>1.01484  | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618<br>ORB<br>TTC  4.66076<br>3.36855<br>5.40636<br>6.73667<br>11.2302                                 | 16 17 18 Detector Frame #  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 Detector Frame #  1 2 3  | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Rati<br>1225<br>1326<br>1891                         | Avg Ratio  Descriptor | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627<br>1.00819   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547<br>12.215<br>ORB<br>TTC<br>17.9039<br>14.5115<br>13.1875            |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector Frame #  2 3 4 5 6     | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Ratios | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99658<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.9995<br>0.996387<br>0.991278<br>0.9995<br>0.998682<br>0.989485<br>0.989485<br>0.983406<br>Descriptor<br>Avg Ratio<br>1.02146<br>1.02969<br>1.0185<br>1.01484<br>1.0089 | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618<br>ORB<br>TTC  4.66076<br>3.36855<br>5.40636<br>6.73667<br>11.2302<br>2.0361                       | 16 17 18 Detector Frame #  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 Detector Frame #  1 2 3 4  | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Rati<br>1225<br>1326<br>1891<br>1378                 | Avg Ratio  Descriptor | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627<br>1.00819   | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547<br>12.215<br>ORB<br>TTC<br>17.9039<br>14.5115<br>13.1875            |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector Frame #  2 3 4 5 6 7   | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Ratios | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99654<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.99995<br>0.998682<br>0.989485<br>0.989485<br>0.983406<br>Descriptor<br>Avg Ratio<br>1.02146<br>1.02969<br>1.0185<br>1.01484<br>1.0089<br>1.04911<br>1.00465            | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618<br>ORB<br>TTC  4.66076<br>3.36855<br>5.40636<br>6.73667<br>11.2302<br>2.0361<br>21.4853            | 16 17 18 Detector Frame #  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 Detector Frame #  1 2 3 4 5  | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Rati<br>1225<br>1326<br>1891<br>1378<br>1224<br>2144 | Avg Ratio  Descriptor | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00139<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627<br>1.00819<br>1.00559<br>1.00689<br>1.00758<br>1.00554<br>1.00153<br>1.00474 | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547<br>12.215<br>ORB<br>TTC<br>17.9039<br>14.5115<br>13.1875<br>18.0584 |
| 19 Detector Frame #  2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 Detector Frame #  2 3 4 5 6 7 8 | 1710<br>1829<br>ORB<br>No Of Ratios<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Ratios | 1.03938<br>77.9308<br>Descriptor<br>Avg Ratio<br>0.980012<br>0.994953<br>0.992293<br>0.993807<br>0.985029<br>0.987608<br>0.99104<br>0.996756<br>0.99654<br>1.00084<br>0.979959<br>0.996387<br>0.991278<br>0.9995<br>0.998682<br>0.989485<br>0.989485<br>0.983406<br>Descriptor<br>Avg Ratio<br>1.02146<br>1.02969<br>1.0185<br>1.01484<br>1.0089                                   | 2.53927<br>0.00129987<br>BRIEF<br>TTC  -5.00308<br>-19.8156<br>-12.9748<br>-16.148<br>-6.67954<br>-8.06963<br>-11.1606<br>-30.8224<br>-10.6026<br>-7.4293<br>119.756<br>-4.98985<br>-27.6762<br>-11.4647<br>-2013.65<br>-75.8941<br>-9.51041<br>-6.02618<br>ORB<br>TTC  4.66076<br>3.36855<br>5.40636<br>6.73667<br>11.2302<br>2.0361<br>21.4853<br>4.49471 | 16 17 18 Detector Frame #  1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 Detector Frame #  1 2 3 4 5 6 6 7 8 9 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 9 10 6 7 8 8 9 10 6 7 8 8 9 10 6 7 8 8 9 10 6 7 8 8 9 10 6 7 8 8 9 10 6 7 8 8 9 10 6 7 8 8 8 9 10 6 7 8 8 8 9 10 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 | 1890<br>1710<br>1829<br>ORB<br>No Of Rati<br>1275<br>1431<br>2415<br>1830<br>1710<br>2700<br>3003<br>2555<br>2346<br>2145<br>1378<br>1953<br>1653<br>2346<br>1539<br>2414<br>2555<br>1769<br>ORB<br>No Of Rati<br>1225<br>1326<br>1891<br>1378                 | Avg Ratio  Descriptor | 1.00886<br>1.00802<br>1.0039<br>1.00673<br>1.00555<br>1.00372<br>1.0033<br>1.00274<br>1.00263<br>1.00097<br>1.00342<br>1.00714<br>1.00908<br>1.00428<br>1.00855<br>1.01184<br>1.00888<br>1.00855<br>1.00627<br>1.00819  | 11.2863<br>12.4705<br>25.6678<br>BRIEF<br>TTC<br>14.8587<br>18.0032<br>26.8547<br>13.9967<br>11.0165<br>23.3588<br>11.6981<br>8.44831<br>11.2662<br>11.6899<br>15.9547<br>12.215<br>ORB<br>TTC<br>17.9039<br>14.5115<br>13.1875<br>18.0584 |

| 12   |   |  | 7.29984  | 10  | 1326  | 1.00244   |
|--|---|--|--|---|---|---|
| 13   | 1540  |  | 19.2129  | 11  | 1326  | 1.0112 8.929  |
| 14   | 1596  |  | 0.0084225  | 12  | 1540  | 1 01056 0 474   |
| 15   | 2145  |  | 3.51761  | 13  | 1596  | 1.01056 9.471   |
| 16   | 1274  |  | 2.57919  | 14  | 2145  | 1.00734 13.62   |
| 17   | 1952  |  | 9.61507  | 15  | 1274  | 1.00779 12.84   |
| 18   | 2079  | 1.01063  | 9.40351  | 16  | 1952  | 1.01053 9.499   |
| 19   | 1539  | 1.01562  | 6.40398  | 17  | 2079  | 1.00696 14.36   |
|  | AKAZE   | Descriptor   | BRISK  | 18  | 1539  | 1.00351 28.46   |
| rame #   | No Of Ratios  | Avg Ratio  | TTC  |   | AKAZE Descr   |   |
| 2  | 4950  |  | 17.2164  | Frame #   | No Of Rati Avg F  |   |
| 3  | 5778  |  | 15.7747  | 1   | 4950  | 1.00797 12.55   |
| 4  | 7021  | 1.00659  | 15.1844  | 2   | 5778  | 1.00716 13.96   |
| 5  | 6328  | 1.00573  | 17.4478  | 3   | 7021  | 1.00747 13.39   |
| 6  | 5460  | 1.00656  | 15.2418  | 4   | 6328  | 1.00679 14.73   |
| 7  | 5356  | 1.00538  | 18.5866  | 5   | 5460  | 1.00715 13.98   |
| 8  | 7381  | 1.0063   | 15.8637  | 6   | 5356  | 1.00629 15.88   |
| 9  | 7503  | 1.00729  | 13.7207  | 7   | 7381  | 1.00631 15.86   |
| 10   | 7140  | 1.00686  | 14.5721  | 8   | 7503  | 1.00708 14.13   |
| 11   | 8001  | 1.00769  | 13.005   | 9   | 7140  | 1.00697 14.35   |
| 12   | 6555  | 1.00739  | 13.5365  | 10  | 8001  | 1.00817 12.24   |
| 13   | 8385  | 1.0075   | 13.3282  | 11  | 6555  | 1.0082 12.19  |
| 14   | 7260  |  | 11.1728  | 12  | 8385  | 1.00879 11.3  |
| 15   | 6670  |  | 12.9047  | 13  | 7260  | 1.00962 10.39   |
| 16   | 7021  |  | 11.9038  | 14  | 6670  | 1.0095 10.52  |
| 17   | 7140  |  | 10.88  | 15  | 7021  | 1.01011 9.895   |
| 18   | 7021  |  | 9.94932  | 16  | 7140  | 1.00985 10.15   |
| 19   | 6555  |  | 8.96721  | 17  | 7021  | 1.01086 9.205   |
|  | AKAZE   | Descriptor   | BRIEF  | 18  | 6555  | 1.01125 8.887   |
| rame #   | No Of Ratios  | Avg Ratio  | TTC  | Detector  | AKAZE Descr   |   |
| 2  |   | -  | 16.861   | Frame #   | No Of Rati Avg F  | •   |
| 3  | 7021  |  | 28.0265  |   | •   |   |
|  |   |  |  | 1   |   |   |
| 4  | 8128  | 1.00746  | 13.4113  | 2   | 7021  | 1.00663 15.08   |
| 5  | 7260  |  | 19.4968  | 3   | 8128  | 1.0075 13.3   |
| 6  | 7260  |  | 22.0542  | 4   | 7260  | 1.0066 15.16  |
| 7  | 7260  |  | 13.8057  | 5   | 7260  | 1.00655 15.25   |
| 8  | 9045  |  | 19.9015  | 6   | 7260  | 1.0068 14.69  |
| 9  | 9316  |  | 21.1333  | 7   | 9045  | 1.00632 15.82   |
| 10   | 8256  |  | 15.9619  | 8   | 9316  | 1.00689 14.52   |
| 11   | 9453  | 1.00685  | 14.595   | 9   | 8256  | 1.00689 14.50   |
| 12   | 9591  | 1.00641  | 15.5958  | 10  | 9453  | 1.00804 12.44   |
| 13   | 9453  | 1.00446  | 22.4375  | 11  | 9591  | 1.00766 13.06   |
| 14   | 8515  | 1.00774  | 12.9166  | 12  | 9453  | 1.00806 12.40   |
| 15   | 8515  | 1.00714  | 14.008   | 13  | 8515  | 1.00971 10.29   |
| 16   | 8646  | 1.00914  | 10.9455  | 14  | 8515  | 1.0096 10.41  |
| 17   | 9316  | 1.00718  | 13.9285  | 15  | 8646  | 1.01039 9.629   |
| 18   | 8778  | 1.00843  | 11.8691  | 16  | 9316  | 1.00981 10.19   |
| 19   | 8256  | 1.00961  | 10.4097  | 17  | 8778  | 1.01096 9.128   |
| Detector   | AKAZE   | Descriptor   | ORB  | 18  | 8256  | 1.01107 9.032   |
| rame #   | No Of Ratios  | Avg Ratio  | TTC  | Detector  | AKAZE Descr   | iptor ORB   |
| 2  | 5671  | 1.00487  | 20.5418  | Frame #   | No Of Rati Avg F  | Ratio TTC   |
| 3  | 6216  |  | 17.9896  | 1   | 5671  | 1.00771 12.97   |
| 4  | 7626  |  | 16.4404  | 2   | 6216  | 1.007 14.28   |
| 5  | 6328  |  | 19.5072  | 3   | 7626  | 1.0075 13.33  |
| 6  | 5778  |  | 22.4472  | 4   | 6328  | 1.00682 14.65   |
| 7  | 5995  | 1.00448  | 20.5116  | 5   | 5778  | 1.00648 15.42   |
| 8  | 8128  |  | 17.9052  | 6   | 5995  | 1.0065 15.37  |
|  |   |  | 14.7722  |   |   | 1.00626 15.96   |
| Ω  | 7750  | 1 (1116 / /  | 17.//LL  | 7   | 8178  | 1.00020 13.90   |
| 9<br>10  | 7750<br>7503  |  |  | 7<br>8  | 8128<br>7750  | 1 00714 14 04   |
| 10   | 7503  | 1.00546  | 18.3062  | 8   | 7750  |   |
| 10<br>11   | 7503<br>9045  | 1.00546<br>1.00937   | 18.3062<br>10.6778   | 8   | 7750<br>7503  | 1.00679 14.72   |
| 10<br>11<br>12   | 7503<br>9045<br>6903  | 1.00546<br>1.00937<br>1.00673  | 18.3062<br>10.6778<br>14.8559  | 8<br>9<br>10  | 7750<br>7503<br>9045  | 1.00679 14.72<br>1.00848 11.78  |
| 10<br>11<br>12<br>13   | 7503<br>9045<br>6903<br>8001  | 1.00546<br>1.00937<br>1.00673<br>1.00727   | 18.3062<br>10.6778<br>14.8559<br>13.7484   | 8<br>9<br>10<br>11  | 7750<br>7503<br>9045<br>6903  | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08   |
| 10<br>11<br>12<br>13<br>14   | 7503<br>9045<br>6903<br>8001<br>7626  | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742  | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759  | 8<br>9<br>10<br>11<br>12  | 7750<br>7503<br>9045<br>6903<br>8001  | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96  |
| 10<br>11<br>12<br>13<br>14<br>15   | 7503<br>9045<br>6903<br>8001<br>7626<br>7750  | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00794   | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879   | 8<br>9<br>10<br>11<br>12<br>13  | 7750<br>7503<br>9045<br>6903<br>8001<br>7626  | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7  |
| 10<br>11<br>12<br>13<br>14<br>15   | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381  | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00794   | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174  | 8<br>9<br>10<br>11<br>12<br>13  | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750  | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7<br>1.0094 10.64  |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17   | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001  | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00794<br>1.00762<br>1.01002   | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726   | 8<br>9<br>10<br>11<br>12<br>13<br>14  | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381  | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7<br>1.0094 10.64<br>1.00986 10.13   |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17   | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503  | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00794<br>1.00762<br>1.01002<br>1.00889  | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726<br>11.2483  | 8<br>9<br>10<br>11<br>12<br>13<br>14<br>15  | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001  | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7<br>1.0094 10.64<br>1.00986 10.13<br>1.00966 10.35  |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17   | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001  | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00794<br>1.00762<br>1.01002<br>1.00889  | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726   | 8<br>9<br>10<br>11<br>12<br>13<br>14  | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381  | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7<br>1.0094 10.64<br>1.00986 10.13<br>1.00966 10.35  |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19   | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503  | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00794<br>1.00762<br>1.01002<br>1.00889<br>1.01174   | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726<br>11.2483  | 8<br>9<br>10<br>11<br>12<br>13<br>14<br>15  | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001  | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7<br>1.0094 10.64<br>1.00986 10.13<br>1.00966 10.35<br>1.01105 9.051   |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector                                     | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021  | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00794<br>1.00762<br>1.01002<br>1.00889<br>1.01174   | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726<br>11.2483<br>8.52149   | 8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17                              | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503  | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7<br>1.0094 10.64<br>1.00986 10.13<br>1.00966 10.35<br>1.01105 9.051<br>1.01119 8.935  |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector                                     | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021  | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00794<br>1.00762<br>1.01002<br>1.00889<br>1.01174<br>Descriptor<br>Avg Ratio  | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726<br>11.2483<br>8.52149   | 8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17                              | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021  | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7<br>1.0094 10.64<br>1.00986 10.13<br>1.00966 10.35<br>1.01105 9.051<br>1.01119 8.935  |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector                                     | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE<br>No Of Ratios   | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00762<br>1.01002<br>1.00889<br>1.01174<br>Descriptor<br>Avg Ratio<br>1.00438  | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726<br>11.2483<br>8.52149<br>AKAZE  | 8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>Detector            | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE Descr   | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7<br>1.0094 10.64<br>1.00986 10.13<br>1.00966 10.35<br>1.01105 9.051<br>1.01119 8.935<br>iptor AKAZE<br>Ratio TTC  |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #                          | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE<br>No Of Ratios<br>5565                                 | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00762<br>1.01002<br>1.00889<br>1.01174<br>Descriptor<br>Avg Ratio<br>1.00438<br>1.00459   | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726<br>11.2483<br>8.52149<br>AKAZE<br>TTC<br>22.8082                                  | 8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>Detector<br>Frame # | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE Descri  | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7<br>1.0094 10.64<br>1.00986 10.13<br>1.00966 10.35<br>1.01105 9.051<br>1.01119 8.935<br>iptor AKAZE<br>Ratio TTC<br>1.00788 12.6  |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #                          | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE<br>No Of Ratios<br>5565<br>5995<br>7381                 | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00762<br>1.01002<br>1.00889<br>1.01174<br>Descriptor<br>Avg Ratio<br>1.00438<br>1.00459<br>1.00944                                  | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726<br>11.2483<br>8.52149<br>AKAZE<br>TTC<br>22.8082<br>21.7763<br>10.5939            | 8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>Detector<br>Frame # | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE Descr<br>No Of Rati Avg F<br>5565<br>5995                 | 1.00679 14.72 1.00848 11.78 1.00828 12.08 1.00836 11.96 1.00934 10.7 1.0094 10.64 1.00986 10.13 1.00966 10.35 1.01105 9.051 1.01119 8.935 AKAZE Ratio TTC 1.00788 12.6 1.00683 14.64  |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #                          | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE<br>No Of Ratios<br>5565<br>5995<br>7381<br>6441         | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00762<br>1.01002<br>1.00889<br>1.01174<br>Descriptor<br>Avg Ratio<br>1.00438<br>1.00459<br>1.00944<br>1.00394                       | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726<br>11.2483<br>8.52149<br>AKAZE<br>TTC<br>22.8082<br>21.7763                       | 8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>Detector<br>Frame # | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE Descr<br>No Of Rati Avg F<br>5565<br>5995<br>7381         | 1.00679 14.72 1.00848 11.78 1.00828 12.08 1.00836 11.96 1.00934 10.7 1.0094 10.64 1.00986 10.13 1.00966 10.35 1.01105 9.051 1.01119 8.935 iptor AKAZE Ratio TTC 1.00788 12.6 1.00683 14.64 1.00767 13.04  |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #<br>2<br>3<br>4<br>5<br>6 | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE<br>No Of Ratios<br>5565<br>5995<br>7381<br>6441<br>5778 | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00762<br>1.01002<br>1.00889<br>1.01174<br>Descriptor<br>Avg Ratio<br>1.00438<br>1.00459<br>1.00944<br>1.00394<br>1.00035            | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726<br>11.2483<br>8.52149<br>AKAZE<br>TTC<br>22.8082<br>21.7763<br>10.5939<br>25.3975 | 8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>Detector<br>Frame # | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE Descr<br>No Of Rati Avg F<br>5565<br>5995<br>7381<br>6441 | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7<br>1.0094 10.64<br>1.00986 10.13<br>1.00966 10.35<br>1.01105 9.051<br>1.01119 8.935<br>AKAZE<br>TTC<br>1.00788 12.6<br>1.00783 14.64<br>1.00767 13.04<br>1.00649 15.41 |
| 10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>19<br>Detector<br>Frame #                          | 7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE<br>No Of Ratios<br>5565<br>5995<br>7381<br>6441         | 1.00546<br>1.00937<br>1.00673<br>1.00727<br>1.00742<br>1.00762<br>1.01002<br>1.00889<br>1.01174<br>Descriptor<br>Avg Ratio<br>1.00438<br>1.00459<br>1.00459<br>1.00394<br>1.00035<br>1.00031 | 18.3062<br>10.6778<br>14.8559<br>13.7484<br>13.4759<br>12.5879<br>13.1174<br>9.97726<br>11.2483<br>8.52149<br>AKAZE<br>TTC<br>22.8082<br>21.7763<br>10.5939            | 8<br>9<br>10<br>11<br>12<br>13<br>14<br>15<br>16<br>17<br>18<br>Detector<br>Frame # | 7750<br>7503<br>9045<br>6903<br>8001<br>7626<br>7750<br>7381<br>8001<br>7503<br>7021<br>AKAZE Descr<br>No Of Rati Avg F<br>5565<br>5995<br>7381         | 1.00679 14.72<br>1.00848 11.78<br>1.00828 12.08<br>1.00836 11.96<br>1.00934 10.7<br>1.0094 10.64<br>1.00986 10.13<br>1.00966 10.35<br>1.01105 9.051<br>1.01119 8.935<br>AKAZE<br>TTC<br>1.00788 12.66<br>1.00683 14.64<br>1.00767 13.04                 |

| 10       | 7626         | 1.00553    | 18.0846            | 8        | 8256         | 1.0070           | 1 14.2731 |
|----------|--------------|------------|--------------------|----------|--------------|------------------|-----------|
| 11       | 8778         | 1.00701    | 14.2655            | 9        | 7626         | 1.0068           | 5 14.6063 |
| 12       | 7140         | 1.00714    | 14.0104            | 10       | 8778         | 1.0081           | 8 12.2191 |
| 13       | 8001         | 1.00875    | 11.4234            | 11       | 7140         | 1.0081           | 1 12.327  |
| 14       | 7626         | 1.00952    | 10.5056            | 12       | 8001         | 1.0085           | 9 11.6456 |
| 15       | 7875         | 1.0094     | 10.6334            | 13       | 7626         | 1.0093           | 3 10.7227 |
| 16       | 7021         | 1.0089     | 11.2321            | 14       | 7875         | 1.0094           | 9 10.5414 |
| 17       | 8256         | 1.00987    | 10.1287            | 15       | 7021         | 1.0095           | 9 10.4232 |
| 18       | 7260         | 1.00935    | 10.698             | 16       | 8256         | 1.0098           | 4 10.1664 |
| 19       | 7503         | 1.01253    | 7.98225            | 17       | 7260         | 1.0110           | 9.06587   |
| Detector | SIFT         | Descriptor | BRISK              | 18       | 7503         | 1.0110           |           |
| Frame #  | No Of Ratios | Avg Ratio  | TTC                | Detector |              | Descriptor       | BRISK     |
| 2        |              |            | 13.6488            | Frame #  | No Of Rati   | Avg Ratio        | TTC       |
| 3        | 3642         | 1.0071     | 14.0872            | 1        | 4259         | 1.0080           |           |
| 4        |              | 1.0073     | 13.6994            | 2        | 3642         | 1.0080           | 4 12.4339 |
| 5        |              | 1.00185    | 54.1178            | 3        | 5756         | 1.007            | 7 12.9928 |
| 6        |              |            | 14.5067            | 4        | 4831         | 1.0056           |           |
| 7        |              |            | 12.9907            | 5        | 4355         | 1.0070           |           |
| 8        |              |            | 12.6448            | 6        | 4839         | 1.0084           |           |
| 9        | 6428         |            | 10.7268            | 7        | 6423         | 1.0073           |           |
| 10       |              |            | 12.9169            | 8        | 6428         | 1.0076           |           |
| 11       |              |            | 6.728              | 9        | 6419         | 1.0075           |           |
| 12       |              |            | 10.6493            | 10       | 4352         | 1.0098           |           |
| 13       |              |            | 10.2999            | 11       | 4170         | 1.0092           |           |
| 14       |              |            | 8.80983            | 12       | 4931         | 1.0096           |           |
| 15       |              |            | 8.77212            | 13       | 5130         | 1.011            |           |
| 16       |              |            | 8.57535            | 14       | 5024         | 1.0113           |           |
| 17       |              |            | 8.38829            | 15       | 4737         | 1.011            |           |
| 18       |              |            | 8.63975            | 16       | 5230         | 1.0118           |           |
| 19       |              |            | 8.88622            | 17       | 3388         | 1.0121           |           |
|          | SIFT         | Descriptor | BRIEF              | 18       | 4254         | 1.0123           |           |
| Frame #  | No Of Ratios | •          | TTC                | Detector |              | Descriptor       | BRIEF     |
| 2        |              |            | 16.097             | Frame #  | No Of Rati   | •                | TTC       |
| 3        |              |            | 16.2707            | 1        | 5651         | 1.0082           |           |
| 4        |              |            | 22.9103            | 2        | 6421         | 1.0080           |           |
| 5        |              |            | 22.9999            | 3        | 8106         | 1.0071           |           |
| 6        |              |            | 8.7206             | 4        | 7234         | 1.0058           |           |
| 7        |              |            | 17.168             | 5        | 6536         | 1.0068           |           |
| 8<br>9   |              |            | 11.1824<br>17.5538 | 6        | 7005         | 1.0079           |           |
| 10       | 9438         |            |                    | 7        | 9569         | 1.0073           |           |
| 11       |              |            | 27.391<br>17.7323  | 8        | 9438<br>9291 | 1.0066<br>1.0072 |           |
| 12       |              |            | 12.826             | 10       | 7113         | 1.0072           |           |
| 13       |              |            | 9.35046            | 11       | 5978         | 1.0091           |           |
| 14       |              |            | 10.119             | 12       | 8105         | 1.0102           |           |
| 15       |              |            | 7.69528            | 13       | 6998         | 1.0102           |           |
| 16       |              |            | 8.7602             | 14       | 6188         | 1.0113           |           |
| 17       |              |            | 8.15355            | 15       | 6764         | 1.0118           |           |
| 18       |              |            | 7.62599            | 16       | 6879         | 1.0121           |           |
| 19       |              |            | 9.15281            | 17       | 4640         | 1.0124           |           |
| 19       | 0079         | 1.01093    | 5.15201            | 18       | 6079         | 1.0124           |           |
|          |              |            |                    | 10       | 3373         | 1.0121           | 3.20003   |

HITOMASI/BRISK

HITOMASI/BRIEF

HITOMASI/ORB

AST/BRISK

AST/BRIEF

AST/ORB RISK/BRISK

RISK/BRIEF

RISK/ORB

RB/BRISK

RB/BRIEF RB/ORB

KAZE/BRISK

KAZE/BRIEF

KAZE/ORB

KAZE/AKAZE FT/BRISK

FT/BRIEF

HITOMASI/BRIEF HITOMASI/ORB AST/BRISK

HITOMASI/BRISK

AST/ORB BRISK/BRISK

RISK/ORB ORB/BRISK

ORB/ORB
KAZE/BRISK

KAZE/BRIEF

KAZE/ORB

IFT/BRIEF

HITOMASI/BRISK HITOMASI/BRIEF HITOMASI/ORB AST/BRISK AST/BRIEF AST/ORB BRISK/BRISK RISK/BRIEF RISK/ORB )RB/BRISK ORB/BRIEF ORB/ORB KAZE/BRISK KAZE/BRIEF KAZE/ORB KAZE/AKAZE IFT/BRISK IFT/BRIEF

AKAZE/BRISKAKAZE/BRIEF

AKAZE/ORBAKAZE/AKAZE