

## SLAM – EX1

**Git:** [https://github.com/Miryam-Schwartz/SLAM/blob/main/VAN\\_ex/code/ex1.py](https://github.com/Miryam-Schwartz/SLAM/blob/main/VAN_ex/code/ex1.py)

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### Part 1

#### 1.1. Key-points locations on both images:

**image\_0:**



**image\_1:**



#### 1.2. Descriptors of two first features:

**image\_0:**

```
[ 0.  0.  0.  0.  0.  0.  0.  0.  0.  1.  1.  0.  0.  0.  0.
  0.  0.  7.  7.  0.  0.  3.  1.  0.  0.  1.  1.  0.  0.
 54. 26.  0.  0.  1. 15. 13.  4. 10.  1.  0.  0. 35. 18.
  5.  6. 72.  9.  0.  3.150. 77.  2.  2. 14.  4.  2. 19.
 12.  6.  1.  4.150. 68.  1.  3.  1. 57. 95. 24. 33.  3.
  0.  0. 51. 45. 69. 45. 65.  7.  1.  8.150. 62.  7.  5.
 10. 26. 15. 81. 25.  2.  0.  1.150.124. 14. 16.  0. 19.
 22. 19. 66. 18.  1.  0. 28. 57. 59. 59. 17. 10.  1.  1.
150.150. 15. 10. 10.  9.  3.  6. 60. 44.  4. 12.150. 42.
  3.  3.]
[ 0.  0.  5. 32.133.  6.  4. 12.115. 75.  5. 20.112.  7.
  3. 13.124. 54.  0.  0.  0.  0.  0.  7.  2.  1.  0.  0.
  0.  0.  0.  0.  2. 15.118.133. 43.  3.  0.  0.133. 55.
 35. 23. 44. 12. 12.100.127. 11.  0.  0.  0.  0.  0. 78.
  3.  0.  0.  0.  0.  0.  0.  1. 43. 35. 64.133. 31.  4.]
```

```

0. 1.133. 94. 23. 4. 0. 0. 0. 28.113. 6. 0. 0.
0. 0. 0. 15. 0. 0. 0. 0. 0. 0. 0. 37. 20.
1. 11. 69. 86. 1. 1.133. 62. 0. 0. 2. 2. 0. 9.
21. 3. 0. 0. 0. 0. 0. 1. 0. 0. 0. 0. 0.
0. 0.]

```

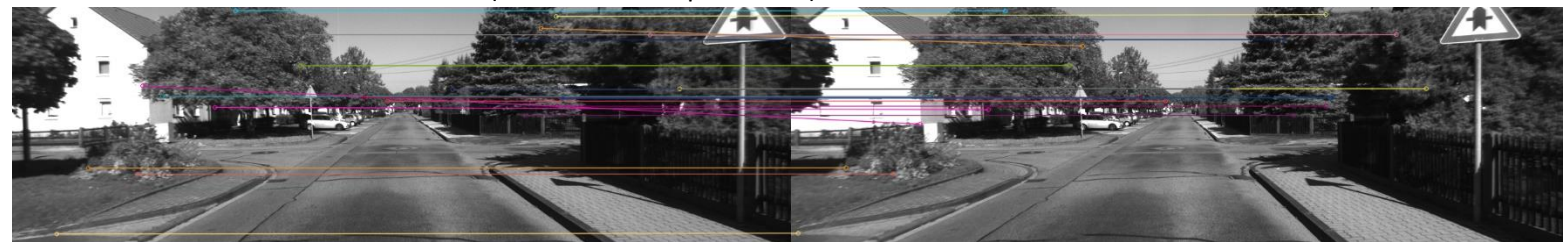
**image\_1:**

```

[ 9. 8. 0. 0. 0. 0. 0. 3.184. 45. 0. 0. 0. 0.
1. 37.184. 55. 0. 0. 0. 0. 0.110. 29. 5. 0. 0.
0. 0. 0. 9. 25. 0. 0. 0. 0. 1. 19. 65.184. 48.
0. 0. 4. 33. 73. 73.184.171. 0. 0. 0. 2. 2. 39.
55. 15. 0. 0. 0. 0. 0. 5. 28. 0. 0. 0. 0. 2.
9. 41. 74. 2. 0. 0. 15. 47. 37. 48.184. 7. 0. 0.
1. 4. 1. 65. 33. 0. 0. 0. 0. 0. 0. 9. 0. 0.
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.
0. 0.]
[22. 4. 1. 1. 4. 37. 14. 13.149. 10. 0. 0. 1. 11.
15. 51.110. 4. 1. 8.101. 70. 38. 27.149. 3. 1. 14.
143. 18. 1. 16. 45. 30. 13. 23. 10. 4. 2. 4.149. 42.
6. 6. 3. 1. 2. 51.121. 7. 2. 19.118. 25. 7. 35.
115. 4. 1. 18.149. 17. 8. 62. 30. 12. 2. 11. 20. 0.
0. 1.149. 35. 2. 5. 4. 0. 0. 6. 76. 8. 1. 18.
24. 3. 3. 32. 30. 0. 0. 20.149. 6. 5. 66. 0. 0.
0. 0. 0. 0. 0. 0. 1. 0. 0. 0. 0. 0. 0. 0.
3. 0. 0. 0. 0. 0. 0. 1. 3. 0. 0. 4. 18. 0.
0. 2.]

```

1.3. Random matches (20 matches are presented):



1.4. Using significance test to reject matches:

- "good" matches (20 are presented):



- We used ratio value 0.75
- The number of discarded matches after applying significance test was: 2317

- Correct match that failed the significance test (the following image include 20 random "failed" matches): **the pink match.**

