**Dog Nose Recognition (RUMYPET)**

**Performance Measurement**

**Chung-Ang University CVML Lab.**

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**Performance Measurement Environment**

Mac OSX High Sierra 10.13.3

**Processor** 2.3 GHz Intel Core i5

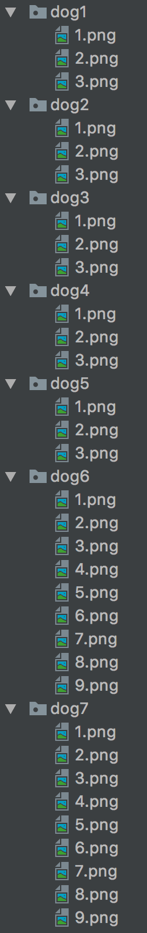
**Memory** 8GB 2133 MHz LPDDR3

**Grapic** Intel Iris Plus Graphics 640 1536 MB

Python 3.6.4

OpenCV 3.4.0

**Directory Structure**



(Dog4 Folder and Dog7 Folder,

Dog5 Folder and Dog6 Folder have a same dog data.

<Figure 1 : Directory Structure>

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| **Input Dog** | **Compared Dog** | **Performance** | **Etc** |
| **DOG1\_1**  **/var/folders/t3/7f84ts3d2pl7wbyykzpg5hsc0000gn/T/com.microsoft.Word/WebArchiveCopyPasteTempFiles/cid5D392B2F-B99F-EB4B-B493-B71B3744B2DC.png** | **DOG1** | /var/folders/t3/7f84ts3d2pl7wbyykzpg5hsc0000gn/T/com.microsoft.Word/WebArchiveCopyPasteTempFiles/cidEB808D2E-36AA-B349-BF4E-6CABA28EA743.png | **Compare 3 datasets** |
|  | **DOG2** | /var/folders/t3/7f84ts3d2pl7wbyykzpg5hsc0000gn/T/com.microsoft.Word/WebArchiveCopyPasteTempFiles/cidE4F2EFFE-A609-9044-AF76-219BC1491F1C.png | **Compare 3 datasets** |
|  | **DOG3** | /var/folders/t3/7f84ts3d2pl7wbyykzpg5hsc0000gn/T/com.microsoft.Word/WebArchiveCopyPasteTempFiles/cid2F2CCC7F-B35B-6A41-9770-9283857DE8A4.png | **Compare 3 datasets** |
|  | **DOG4** | /var/folders/t3/7f84ts3d2pl7wbyykzpg5hsc0000gn/T/com.microsoft.Word/WebArchiveCopyPasteTempFiles/cidF3BB5090-F8AB-7C49-9231-173CBE8684E2.png | **Compare 3 datasets** |
|  | **DOG5** | /var/folders/t3/7f84ts3d2pl7wbyykzpg5hsc0000gn/T/com.microsoft.Word/WebArchiveCopyPasteTempFiles/cid7FE0F2C1-46C7-6C4E-8676-028BDB2F96C5.png | **Compare 3 datasets** |
|  | **DOG6** | /var/folders/t3/7f84ts3d2pl7wbyykzpg5hsc0000gn/T/com.microsoft.Word/WebArchiveCopyPasteTempFiles/cid24CAB635-6372-AE49-9D6D-1605035E30CC.png | **Compare 9 datasets** |
|  | **DOG7** |  | **Compare 9 datasets** |

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| **Dog1\_2** | **Dog1** | **Avg : 64.0** | **Time : 0.13728 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg : 2.667** | **Time: 0.25177 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 1.667** | **Time: 0.17301 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 1.333** | **Time: 0.1729 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 0.667** | **Time: 0.1607 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 1.111** | **Time: 0.58297 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 0.778** | **Time: 0.50136 sec** | **Compare 9 datasets** |

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| **Dog1\_3** | **Dog1** | **Avg: 4.0** | **Time: 0.17446 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 1.333** | **Time: 0.14273 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 1.667** | **Time: 0.1324 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 0.0** | **Time: 0.1729 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 0.667** | **Time: 0.15496 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 1.111** | **Time: 0.41951 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 0.667** | **Time: 0.55922 sec** | **Compare 9 datasets** |

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| **Dog2\_1** | **Dog1** | **Avg: 0.333** | **Time: 0.22572 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 61.5** | **Time: 0.11522 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 1.333** | **Time: 0.16991 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 0.333** | **Time: 0.16431 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 2.333** | **Time: 0.17084 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 1.333** | **Time: 0.56802 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 0.889** | **Time: 0.59198 sec** | **Compare 9 datasets** |

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| **Dog2\_2** | **Dog1** | **Avg: 2.0** | **Time: 0.17536 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 55.5** | **Time: 0.10971 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 2.667** | **Time: 0.18915 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 0.333** | **Time: 0.16431 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 2.333** | **Time: 0.17084 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 1.333** | **Time: 0.56802 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 0.889** | **Time: 0.59198 sec** | **Compare 9 datasets** |

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| **Dog2\_3** | **Dog1** | **Avg: 0.667** | **Time: 0.22921 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 83.5** | **Time: 0.14604 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 0.667** | **Time: 0.14578 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 1.667** | **Time: 0.16958 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 1.667** | **Time: 0.16820 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 0.778** | **Time: 0.58764 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 0.889** | **Time: 0.51372 sec** | **Compare 9 datasets** |

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| **Dog3\_1** | **Dog1** | **Avg: 1.333** | **Time: 0.12118 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 1.667** | **Time: 0.15074 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 113.0** | **Time: 0.13671 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 1.667** | **Time: 0.18346 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 0.667** | **Time: 0.16430 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 1.111** | **Time: 0.40900 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 1.667** | **Time: 0.50366 sec** | **Compare 9 datasets** |

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| **Dog3\_2** | **Dog1** | **Avg: 1.333** | **Time: 0.18546 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 1.333** | **Time: 0.23710 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 115.1** | **Time: 0.10897 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 2.0** | **Time: 0.23490 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 2.0** | **Time: 0.22492 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 1.556** | **Time: 0.46249 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 1.333** | **Time: 0.49337 sec** | **Compare 9 datasets** |

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| **Dog3\_3** | **Dog1** | **Avg: 1.333** | **Time: 0.18595 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 1.333** | **Time: 0.15372 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 115.5** | **Time: 0.08753 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 2.0** | **Time: 0.22099 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 2.0** | **Time: 0.17084 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 1.556** | **Time: 0.48166 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 1.333** | **Time: 0.51643 sec** | **Compare 9 datasets** |

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| **Dog4\_1** | **Dog1** | **Avg: 2.333** | **Time: 0.19471 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 1.667** | **Time: 0.16191 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 2.0** | **Time: 0.14717 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 1.5** | **Time: 0.10138 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 0.0** | **Time: 0.17306 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 1.111** | **Time: 0.46432 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 52.778** | **Time: 0.54019 sec** | **Compare 9 datasets** |

**(Dog4 and Dog7 are same dog)**

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| **Dog4\_2** | **Dog1** | **Avg: 1.667** | **Time: 0.12688 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 2.667** | **Time: 0.14116 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 2.0** | **Time: 0.12697 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 35.0** | **Time: 0.09621 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 0.333** | **Time: 0.14480 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 1.222** | **Time: 0.47033 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 47.333** | **Time: 0.41879 sec** | **Compare 9 datasets** |

**(Dog4 and Dog7 are same dog)**

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| **Dog4\_3** | **Dog1** | **Avg: 1.667** | **Time: 0.13102 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 0.333** | **Time: 0.14326 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 2.667** | **Time: 0.12649 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 37.0** | **Time: 0.11268 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 2.0** | **Time: 0.14262 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 1.444** | **Time: 0.44649 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 46.778** | **Time: 0.50993 sec** | **Compare 9 datasets** |

**(Dog4 and Dog7 are same dog)**

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| **Dog5\_1** | **Dog1** | **Avg: 0.667** | **Time: 0.1464 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 0.667** | **Time: 0.15688 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 0.333** | **Time: 0.15529 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 0.333** | **Time: 0.16752 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 53.5** | **Time: 0.10637 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 75.889** | **Time: 0.58148 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 0.889** | **Time: 0.45895 sec** | **Compare 9 datasets** |

**(Dog5 and Dog6 are same dog)**

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| **Dog5\_2** | **Dog1** | **Avg: 0.667** | **Time: 0.14181 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 3.0** | **Time: 0.15939 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 0.333** | **Time: 0.14153 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 2.0** | **Time: 0.16480 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 56.0** | **Time: 0.10676 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 96.222** | **Time: 0.43363 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 2.111** | **Time: 0.53040 sec** | **Compare 9 datasets** |

**(Dog5 and Dog6 are same dog)**

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| **Dog5\_3** | **Dog1** | **Avg: 1.667** | **Time: 0.13890 sec** | **Compare 3 datasets** |
|  | **Dog2** | **Avg: 2.667** | **Time: 0.14915 sec** | **Compare 3 datasets** |
|  | **Dog3** | **Avg: 0.0** | **Time: 0.13425 sec** | **Compare 3 datasets** |
|  | **Dog4** | **Avg: 1.333** | **Time: 0.15221 sec** | **Compare 3 datasets** |
|  | **Dog5** | **Avg: 6.0** | **Time: 0.10035 sec** | **Compare 3 datasets** |
|  | **Dog6** | **Avg: 70.889** | **Time: 0.43775 sec** | **Compare 9 datasets** |
|  | **Dog7** | **Avg: 1.111** | **Time: 0.43428 sec** | **Compare 9 datasets** |

**(Dog5 and Dog6 are same dog)**