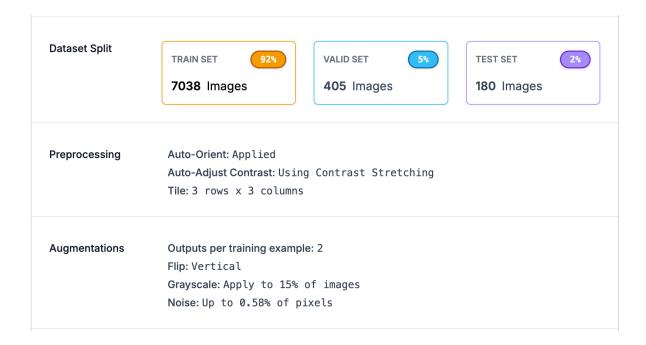# Staff detection

## Assumptions

- Only detecting the staff that walking along the corridor(white color ground)
- 25 frames per second

## Methods

- Using Roboflow to build the model then use the predictions to check if it is staff or not.

| Dataset Split | | | |
|---|---|---|---|
| | **TRAIN SET** 92% | **VALID SET** 5% | **TEST SET** 2% |
| | **7038** Images | **405** Images | **180** Images |
| Preprocessing | **Auto-Orient:** Applied **Auto-Adjust Contrast:** Using Contrast Stretching **Tile:** 3 rows x 3 columns | | |
| Augmentations | **Outputs per training example:** 2 **Flip:** Vertical **Grayscale:** Apply to 15% of images **Noise:** Up to 0.58% of pixels | | |

- Detecting person standing on the corridor and the name tag
    - person tag ⇒ "people"
    - name tag ⇒ "tag"
- The person is staff if
    - The people have similar feature in the staff's database
- Staff's database
    - If the tag box completely overlap with the people box, then add this people into staff's database
    - If the people have similar feature in the staff's database
    - Staff's database only store 25 newest staff features

# Staff frames

Frame: 347 | Position: (390, 588)
Frame: 378 | Position: (511, 86)
Frame: 379 | Position: (521, 85)
Frame: 380 | Position: (525, 85)
Frame: 381 | Position: (534, 87)
Frame: 384 | Position: (534, 130)
Frame: 385 | Position: (535, 136)
Frame: 386 | Position: (537, 140)
Frame: 430 | Position: (524, 606)
Frame: 431 | Position: (525, 600)
Frame: 432 | Position: (533, 592)
Frame: 433 | Position: (545, 560)
Frame: 434 | Position: (562, 535)
Frame: 458 | Position: (447, 84)
Frame: 459 | Position: (453, 83)
Frame: 461 | Position: (451, 82)
Frame: 462 | Position: (457, 79)
Frame: 463 | Position: (474, 80)
Frame: 464 | Position: (489, 82)
Frame: 465 | Position: (496, 96)
Frame: 466 | Position: (500, 100)
Frame: 468 | Position: (512, 119)
Frame: 469 | Position: (519, 127)
Frame: 470 | Position: (523, 152)
Frame: 471 | Position: (526, 164)

Frame: 506 | Position: (517, 632)
Frame: 508 | Position: (533, 582)
Frame: 509 | Position: (538, 574)
Frame: 510 | Position: (546, 564)
Frame: 511 | Position: (554, 533)
Frame: 512 | Position: (558, 505)
Frame: 557 | Position: (548, 152)
Frame: 558 | Position: (544, 168)

Frame: 810 | Position: (510, 650)
Frame: 811 | Position: (510, 640)
Frame: 812 | Position: (511, 625)
Frame: 813 | Position: (512, 620)
Frame: 814 | Position: (513, 615)
Frame: 815 | Position: (517, 598)
Frame: 816 | Position: (527, 560)
Frame: 817 | Position: (541, 552)
Frame: 818 | Position: (550, 537)
Frame: 819 | Position: (559, 498)
Frame: 820 | Position: (560, 464)
Frame: 821 | Position: (565, 440)
Frame: 847 | Position: (676, 99)
Frame: 848 | Position: (672, 99)
Frame: 851 | Position: (648, 103)
Frame: 852 | Position: (631, 102)
Frame: 853 | Position: (606, 104)
Frame: 854 | Position: (593, 109)
Frame: 855 | Position: (579, 113)
Frame: 856 | Position: (570, 113)
Frame: 857 | Position: (563, 137)
Frame: 858 | Position: (558, 147)
Frame: 859 | Position: (556, 165)
Frame: 860 | Position: (552, 175)
Frame: 861 | Position: (549, 217)
Frame: 862 | Position: (548, 226)
Frame: 863 | Position: (548, 242)
Frame: 893 | Position: (499, 650)
Frame: 894 | Position: (503, 643)
Frame: 895 | Position: (507, 631)
Frame: 896 | Position: (510, 624)
Frame: 897 | Position: (513, 624)
Frame: 898 | Position: (515, 618)
Frame: 899 | Position: (516, 594)

Frame: 900 | Position: (518, 578)
Frame: 901 | Position: (523, 557)
Frame: 902 | Position: (525, 550)
Frame: 903 | Position: (527, 528)
Frame: 904 | Position: (531, 495)
Frame: 905 | Position: (534, 479)

Frame: 1062 | Position: (509, 636)
Frame: 1063 | Position: (511, 607)

Frame: 1064 | Position: (515, 592)
Frame: 1065 | Position: (523, 581)
Frame: 1066 | Position: (527, 581)
Frame: 1067 | Position: (534, 544)

Frame: 906 │ Position: (567, 460)
Frame: 925 │ Position: (440, 85)
Frame: 926 │ Position: (434, 83)
Frame: 927 │ Position: (435, 83)
Frame: 928 │ Position: (445, 79)
Frame: 929 │ Position: (455, 80)
Frame: 930 │ Position: (458, 80)
Frame: 931 │ Position: (480, 80)
Frame: 934 │ Position: (499, 109)
Frame: 935 │ Position: (511, 115)
Frame: 936 │ Position: (514, 117)
Frame: 937 │ Position: (520, 148)
Frame: 938 │ Position: (530, 172)
Frame: 939 │ Position: (541, 176)
Frame: 940 │ Position: (546, 200)
Frame: 941 │ Position: (550, 238)
Frame: 942 │ Position: (551, 252)
Frame: 971 │ Position: (495, 640)
Frame: 972 │ Position: (494, 640)
Frame: 973 │ Position: (495, 637)
Frame: 974 │ Position: (496, 622)
Frame: 975 │ Position: (502, 608)
Frame: 976 │ Position: (507, 603)
Frame: 977 │ Position: (515, 595)
Frame: 978 │ Position: (521, 568)
Frame: 979 │ Position: (525, 550)
Frame: 980 │ Position: (534, 535)
Frame: 981 │ Position: (546, 524)
Frame: 982 │ Position: (556, 500)
Frame: 983 │ Position: (535, 475)

Frame: 1005 │ Position: (527, 87)
Frame: 1012 │ Position: (532, 74)
Frame: 1013 │ Position: (532, 78)
Frame: 1014 │ Position: (534, 78)
Frame: 1015 │ Position: (536, 78)
Frame: 1016 │ Position: (537, 78)
Frame: 1017 │ Position: (538, 82)
Frame: 1018 │ Position: (541, 99)
Frame: 1019 │ Position: (542, 108)
Frame: 1020 │ Position: (538, 114)
Frame: 1021 │ Position: (536, 116)
Frame: 1022 │ Position: (538, 135)

Frame: 1068 │ Position: (543, 517)
Frame: 1069 │ Position: (547, 503)
Frame: 1070 │ Position: (546, 492)
Frame: 1105 │ Position: (676, 98)
Frame: 1106 │ Position: (668, 97)
Frame: 1107 │ Position: (655, 101)
Frame: 1108 │ Position: (646, 103)
Frame: 1109 │ Position: (645, 103)
Frame: 1110 │ Position: (635, 103)
Frame: 1111 │ Position: (623, 112)
Frame: 1112 │ Position: (604, 117)
Frame: 1113 │ Position: (594, 121)
Frame: 1114 │ Position: (591, 125)
Frame: 1115 │ Position: (573, 138)
Frame: 1116 │ Position: (565, 160)
Frame: 1117 │ Position: (564, 168)
Frame: 1118 │ Position: (556, 175)
Frame: 1119 │ Position: (555, 201)
Frame: 1120 │ Position: (555, 226)
Frame: 1121 │ Position: (559, 237)
Frame: 1122 │ Position: (566, 253)
Frame: 1154 │ Position: (517, 650)
Frame: 1155 │ Position: (513, 643)
Frame: 1156 │ Position: (509, 637)
Frame: 1157 │ Position: (504, 639)
Frame: 1158 │ Position: (505, 638)
Frame: 1159 │ Position: (508, 618)
Frame: 1160 │ Position: (513, 608)
Frame: 1161 │ Position: (520, 600)
Frame: 1162 │ Position: (528, 594)
Frame: 1163 │ Position: (533, 581)
Frame: 1164 │ Position: (537, 545)
Frame: 1165 │ Position: (537, 529)
Frame: 1166 │ Position: (537, 512)
Frame: 1167 │ Position: (548, 495)
Frame: 1168 │ Position: (546, 464)
Frame: 1169 │ Position: (573, 438)
Frame: 1170 │ Position: (561, 422)
Frame: 1197 │ Position: (529, 82)
Frame: 1198 │ Position: (699, 106)
Frame: 1199 │ Position: (534, 81)
Frame: 1200 │ Position: (535, 84)
Frame: 1201 │ Position: (537, 107)

Frame: 1023 | Position: (539, 157)
Frame: 1024 | Position: (543, 173)
Frame: 1025 | Position: (550, 179)
Frame: 1026 | Position: (556, 191)
Frame: 1059 | Position: (512, 642)
Frame: 1060 | Position: (511, 635)
Frame: 1061 | Position: (509, 636)

Frame: 1202 | Position: (535, 117)
Frame: 1203 | Position: (539, 122)
Frame: 1204 | Position: (541, 126)
Frame: 1205 | Position: (570, 153)
Frame: 1206 | Position: (555, 181)
Frame: 1207 | Position: (559, 173)
Frame: 1208 | Position: (551, 201)