If I were to sell the template detector for face detection, I would use **average\_face\_cropped.png**.

I tested both images with a threshold of 0.4, 0.5, 0.6, 0.6, and 0.8, using an IoU threshold of 0.5 and a scales array made from make\_scales\_array(1, 5, 1.1).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Cropped Image** | | | **Uncropped Image** | | |
| **Detection**  **Threshold:** | **True Positive** | **False Positive** | **False Negative** | **True Positive** | **False Positive** | **False Negative** |
| 0.4 | 38 | 673 | 27 | 33 | 992 | 32 |
| 0.5 | 28 | 54 | 37 | 29 | 339 | 36 |
| 0.6 | 15 | 4 | 50 | 20 | 58 | 45 |
| 0.7 | 4 | 0 | 61 | 5 | 2 | 60 |
| 0.8 | 0 | 0 | 65 | 0 | 1 | 65 |

The average true positive rate per ground truth and average false positives per image are:

|  |  |  |
| --- | --- | --- |
|  | **Cropped Image** | **Uncropped Image** |
| **TP / ground truth:** | 26.15% | 26.77% |
| **FP / image:** | 3.749 | 7.139 |

Using the cropped image had a much lower false positive rate than the uncropped image, while having a similar or even higher true positive rate depending on the threshold. However, the threshold can be customized by the users, making it a better choice.