

# GUI Controls for Object Detection Settings - Implementation Summary

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## Overview

Successfully implemented GUI controls for object detection settings in the human-blur-tool application.

## Changes Made

### 1. Modified `blur_humans.py`

- **Changed default value** of `enable_object_detection` parameter from `True` to `False` in the `HumanBlurProcessor.__init__()` method (line 40)
- **Updated CLI argument** `--enable-detection` default from `True` to `False` (line 974)
- Updated help text to reflect “default: disabled” instead of “default: enabled”

### 2. Modified `gui.py`

#### Added New Variables (lines 241-242):

- `self.enable_object_detection = tk.BooleanVar(value=False)` - Toggle for object detection
- `self.detection_model = tk.StringVar(value="yolov8m.pt")` - Selected detection model

#### Updated Person Detection Model Section (lines 426-445):

- Changed label from “Model:” to “Person Model:” for clarity
- Updated model labels to use consistent speed indicators:
- “yolov8n-seg.pt (fastest)”
- “yolov8s-seg.pt (faster)”
- “yolov8m-seg.pt (normal)”
- “yolov8l-seg.pt (slower)”
- “yolov8x-seg.pt (slowest)”

#### Added Object Detection Toggle (lines 447-457):

- Checkbox control with text: “Enable Object Detection (for background objects)”
- Bound to `self.enable_object_detection` variable
- Calls `self.update_detection_controls()` when toggled

#### Added Object Detection Model Dropdown (lines 459-478):

- Label: “Detection Model:”
- Options with speed labels:
- “yolov8n.pt (fastest)”
- “yolov8s.pt (faster)”
- “yolov8m.pt (normal)” (default)
- “yolov8l.pt (slower)”
- “yolov8x.pt (slowest)”
- Bound to `self.detection_model` variable
- Calls `update_detection_model_selection()` on selection

## Added New Methods:

`update_detection_model_selection()` (lines 595-607):

- Extracts actual model name from dropdown display text
- Maps display text to actual model filenames

`update_detection_controls()` (lines 609-614):

- Enables/disables the detection model dropdown based on toggle state
- When toggle is OFF: dropdown is disabled
- When toggle is ON: dropdown is enabled (readonly state)

## Updated Initialization (line 580):

- Added call to `self.update_detection_controls()` to set initial state

## Updated Processor Creation (lines 747-757):

- Added `enable_object_detection=self.enable_object_detection.get()` parameter
- Added `detection_model=self.detection_model.get()` parameter

# Features Implemented

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## 1. Toggle/Checkbox Control

- Located in Advanced Settings section
- Default state: OFF (False)
- Clear label indicating it's for background object detection

## 2. Object Detection Model Dropdown

- Shows 5 YOLO models (n, s, m, l, x variants)
- Speed labels (fastest to slowest)
- Default: yolov8m.pt (normal)
- Properly disabled when toggle is OFF
- Properly enabled when toggle is ON

## 3. Person Detection Model Dropdown

- Updated labels for consistency
- Shows 5 YOLO segmentation models
- Speed labels (fastest to slowest)
- Clear "Person Model:" label

## 4. Default Values

- `enable_object_detection` : False in both GUI and CLI
- `detection_model` : "yolov8m.pt" in GUI
- All controls properly connected to underlying functionality

# GUI Layout

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The controls are arranged in the **Advanced Settings** section in this order:

1. Confidence slider
2. Person Model dropdown (for person/face detection)
3. Enable Object Detection checkbox
4. Detection Model dropdown (for background objects)

## Testing Recommendations

**1. Visual Test:** Run the GUI to verify:

- All controls appear correctly
- Detection Model dropdown is disabled by default
- Dropdown becomes enabled when checkbox is checked
- Dropdown becomes disabled when checkbox is unchecked

**2. Functional Test:** Process a file with:

- Object detection OFF (default) - should not detect background objects
- Object detection ON - should detect and log background objects

## Git Commit

Committed changes to git with commit hash: ef2b491

Commit message:

Add GUI controls for object detection settings

- Added toggle/checkbox for enable\_object\_detection (default: OFF/False)
- Added dropdown for YOLO object detection models with speed labels (yolov8n.pt to yolov8x.pt)
- Updated person detection model dropdown labels to use consistent speed indicators (fastest to slowest)
- Implemented enable/disable logic for object detection model dropdown based on toggle state
- Changed default value of enable\_object\_detection to False in both GUI and CLI
- Updated GUI to pass enable\_object\_detection and detection\_model parameters to HumanBlurProcessor

## Files Modified

1. blur\_humans.py - Main processing logic
2. gui.py - GUI implementation

## Total Changes

- **Lines added:** 75
- **Lines removed:** 16
- **Net change:** +59 lines