

Sprint 4 Formal Feedback (Code Review)

Reviewer: Jimmy Nguyen

Reviewee: Alec Campodnico

Team Name: Angry Birds

Project: Bird Chirps

Libraries Noted:

TensorFlow

OpenCV

NumPy

OpenPyXL

JSON

Tkinter

Pillow

pathlib

collections

Readability:

The code maintains high readability standards established in previous sprints. Clear modular structures are evident, and there is consistent use of comments which facilitate the understanding of the flow and purpose of functions. The application of Python's Tkinter library for GUI elements is handled efficiently, avoiding clutter in the main logic which is a common pitfall in GUI applications.

Areas for Improvement:

Although the existing comments aid in navigating the code, employing Python docstrings for all functions could significantly enhance the understanding and maintainability of the code. This documentation should include descriptions of the function's purpose, parameters, return values, and potential exceptions thrown.

Efficiency:

The code exhibits a sophisticated mechanism for dynamically switching between multiple machine learning models based on real-time user input without the need for restarting the application, reflecting an advanced level of software design.

Areas for Improvement:

Despite improvements, the application's performance could be further enhanced by optimizing the video file handling to process files in a queued manner rather than simultaneous processing. This could reduce the memory footprint and increase the application's responsiveness.

Modularity

Improvements Noted:

The application shows excellent separation of concerns through well-defined functions that handle specific tasks. This sprint introduces better structuring of global variables which aids in making the codebase more organized and easier to manage.

Areas for Improvement:

The code could benefit from an architectural overhaul to adopt a model-view-controller (MVC) pattern. This would cleanly separate the business logic from the user interface code, further enhancing the modularity and scalability of the application.

Error Handling**Areas for Improvement:**

Current error management within the application is basic and could be expanded to cover more failure scenarios, particularly in file access and model loading processes. More robust error handling with clear user notifications would greatly improve the user experience and reliability of the application.

GUI Usability

The addition of intuitive GUI elements such as model selection toggles and real-time progress indicators significantly enriches user interaction. The overall layout is clean and conducive to easy navigation.

Areas for Improvement:

While the GUI is functional and aesthetically pleasing, adding tooltips or a help section could provide users with on-the-spot guidance on the functionality of each component. Implementing additional video playback controls would allow users more flexibility in analyzing video data.