Consumer Photo Editing Use Case

EXECUTIVE SUMMARY

Neurala has built segmentation software that can segment specific objects from an image, such as a dog or a plant. This software allows the developer to view and manipulate the segmented objects. For example, a company can integrate this software as a new feature which can be selected. Some tools may ask the user to choose classes they want segmented from a list, or they may automatically segment the entire image. After the AI segments the objects, the photo editing tool can be programmed to allow the user to delete the selected object, or edit settings for each object - adjusting saturation, brightness, contrast, and more. These settings can be saved to a custom filter type for easy photo editing on similar images. Neurala's segmentation software provides detection for multiple objects with high level accuracy and the flexibility to customize the user experience for any photo editing tool.

ABOUT

Photographers are constantly looking to increase throughput and cater to original ideas quickly as a variety of new ideas are posted on social media every day. There are several AI-enabled apps that are pre-installed or can be downloaded on every phone. Recently, AI-enabled editing platforms have begun to emerge which allow users to select a subject and modify brightness, contrast, saturation, and other features on the specified subject. A host of photo editing, image manipulation, and object detection applications with AI abilities are quickly coming to market to improve photographer interaction and usability.

THE CHALLENGE

Photoshop editing software, however, can only do so much. For example, users can select only the most dominant subject or subjects. This feature lacks the ability to select other objects in the scene that may be important to the user. Additionally, as with any editing, the user must edit each individual photo, even if the process may be the same for a number of photos. Users would benefit from bulk editing features where a user could create a custom "filter" that would edit similar photos automatically to the user preference. For example, a user wants all plants in a scene to be saturated, AI can find all plants and add the specified saturation setting automatically.

KEY ISSUES

AI photo editing software is quickly gaining traction, but why haven't these challenges been addressed? There are 3 key issues that are preventing customizable AI solutions in photo editing:
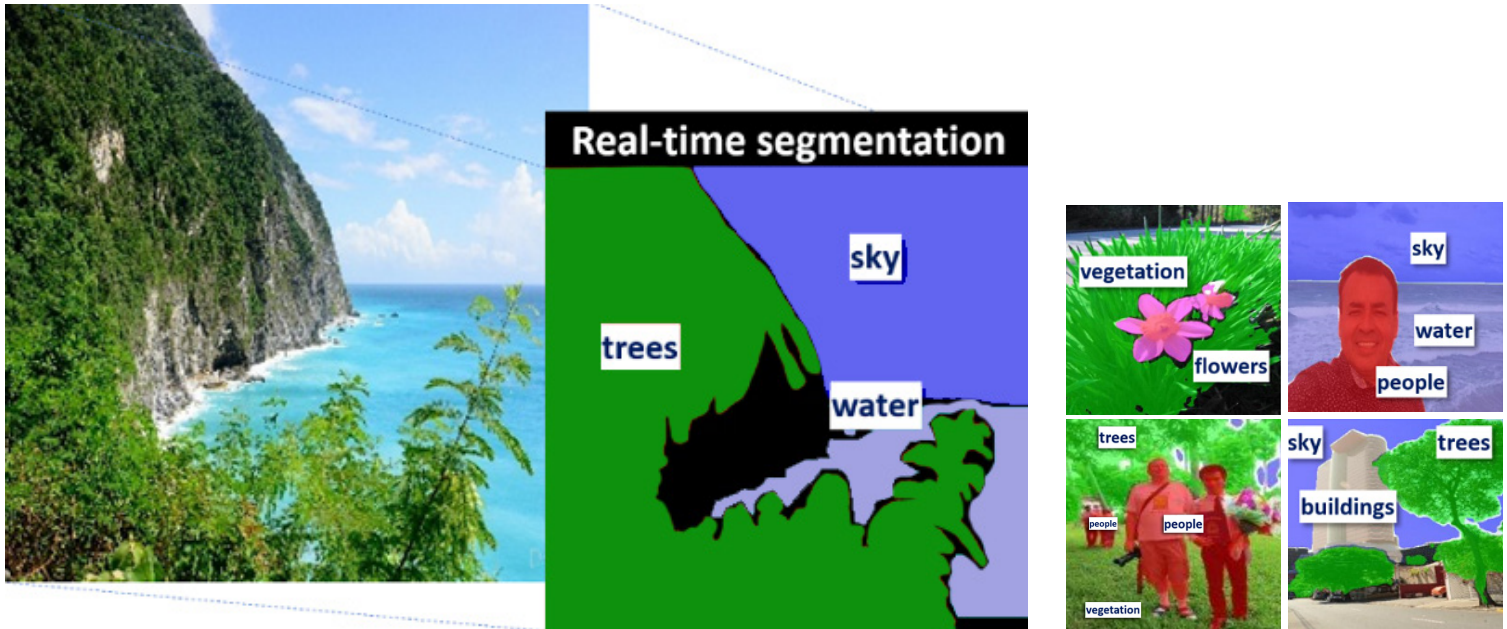
Accuracy and Data

A massive amount of data is needed to provide users with the accuracy necessary to provide perfect masks for selection and manipulation.

Cost

A system like this is expensive. Normally, expensive and clunky hardware is needed to support a system that can quickly identify and select multiple objects.

Memory

Storage for a network that was trained on hundreds of thousands of data and knows multiple objects would traditionally require a large storage space, which slows down the running application and could slow down other processes in a user workspace, especially on a mobile device.

SOLUTION

Neurala has built a segmentation network that can select up to 7 objects in an image, including people, pets, plants, buildings, sky, water, and flowers. An SDK is provided that visualize these detections in an image. A developer can use the SDK to build a application where a user can select these objects in an image and edit the settings for brightness, contrast, filters, and more. Furthermore, the user could customize a specific filter type to bulk edit several similar images with one click. To solve this complex problem, Neurala focused on solving these key issues:

Accuracy and Data

Neurala has amassed and annotated 120,000+ images to build the most accurate AI-enabled application for photo editing.

Cost

Neurala has greatly reduced the cost related to AI-enabled photo editing through leading expertise in low-end hardware optimizations.

Memory

Furthermore, Neurala has optimized our hardware to increase user hard drive space and increase throughput. Neurala has specially optimized for hardware with less drive space, such as mobile devices.

KEY BENEFITS

- Change backgrounds
- Edit settings for specific object types
- On-device for privacy
- Keep data secure, no connection to cloud required
- Customized filter types for similar photos
- Bulk editing