

Plan for update of artefacts removals

Observed issue

- Artefacts in texture after the palettization (small area of colors stay isolated and create to small island to be correctly (due to the pen size) drawn)
- Colored parts of texture that have no reference in the UV map create traces without references. For example, when a trace start from a point in the UV map but end outside, it isn't processed.

Planned changes

- Add some blur in the texture before palettization :
 - Should invisibilise the very small isolated artefacts
- Use another palettization method. The current `quantize()` function with the default `MEDIANCUT` has the main issue that the dominant color will crush due to the associated weight when palettizing.
- Add a mask of UV map to reduce texture image colored only to relative existing UV map references.

Changes done

- ✓ Add the `blur()` method in the `Tracer` Class
- ✓ Changes the quantize method, using `quantize_to_palette()` a function re-used as such from the found source.
- ✓ Add a mask function ([used source 1](#) and [used source 2](#))

New issues

- After thoses three updates, palettization is now confusing background of texture (not part of UV map) and the texture to applied, so the mask is to be applied after the palettization.
- Small artefacts are still remaining. Deactivating the blur proved to be a first good step.
- When visualazing the projected traces on the model, a new issue appeared :
 - Possibly due to the new mask, some points are now a bit outside the uv-map making their relative trace undrawable.
 - An idea to solve this issue could be to shrink the uv mask to ensure that all traces claculated will start/end on the model.
 - Also, some borders between parts of the uv map are very close (up to 1px), thus in the palettization/island detection they will get caught in one block.

✘ Error

This idea proves to be very difficult to implement. So trying so image processing like erode and dilatation seems to be more pertinent.

💡 Idea

In the palettized texture, for each artefacts(too small island), change it's color to the dominant one around.

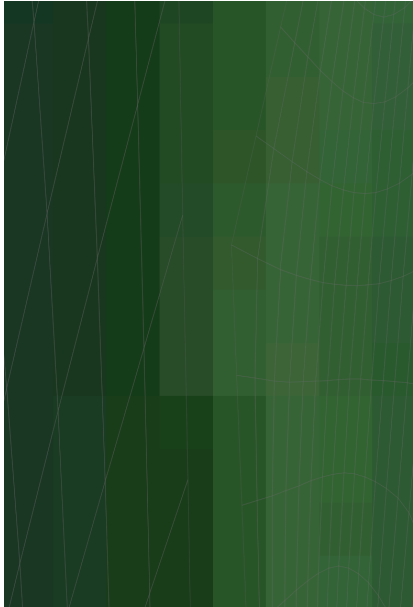


Figure 1: Exemple de marge à 1 px entre deux blocs de la UV map

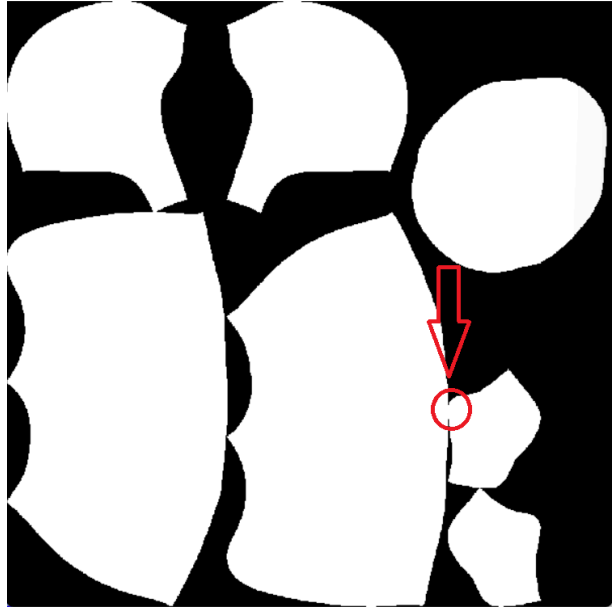


Figure 2: Emplacement de cet exemple
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