```
data_num <- data_list %>%
  mutate(# contains all a certain color
         contains yellow = map dbl(colors, ~ color contains(.x, "yellow", "hsv")),
         contains orange = map dbl(colors, ~ color contains(.x, "orange", "hsv")),
         contains red = map dbl(colors, ~ color contains(.x, "red", "hsv")),
         contains_purple = map_dbl(colors, ~ color_contains(.x, "purple", "hsv")),
         contains blue = map dbl(colors, ~ color contains(.x, "blue", "hsv")),
         contains green = map dbl(colors, ~ color contains(.x, "green", "hsv")),
         contains brown = map dbl(colors, ~ color contains(.x, "brown", "hsv")),
         contains_white = map_dbl(colors, ~ color_contains(.x, "white", "hsv")),
         contains_black = map_dbl(colors, ~ color_contains(.x, "black", "hsv")),
         # All a certain color
         all contains yellow = map dbl(colors, ~ color all contains(.x, "yellow", "hsv")),
         all contains orange = map dbl(colors, ~ color all contains(.x, "orange", "hsv")),
         all_contains_red = map_dbl(colors, ~ color_all_contains(.x, "red", "hsv")),
         all_contains_purple = map_dbl(colors, ~ color_all_contains(.x, "purple", "hsv")),
         all_contains_blue = map_dbl(colors, ~ color_all_contains(.x, "blue", "hsv")),
         all_contains_green = map_dbl(colors, ~ color_all_contains(.x, "green", "hsv")),
         all_contains_brown = map_dbl(colors, ~ color_all_contains(.x, "brown", "hsv")),
         all_contains_white = map_dbl(colors, ~ color_all_contains(.x, "white", "hsv")),
         all_contains_black = map_dbl(colors, ~ color_all_contains(.x, "black", "hsv")),
         # Is it linear in a perceptually uniform space
         linear = map_dbl(colors, ~ linear(.x, "hunterlab")),
         linear_deutan = map_dbl(colors, ~ linear(deutan(.x), "hunterlab")),
         linear_protan = map_dbl(colors, ~ linear(protan(.x), "hunterlab")),
         linear tritan = map dbl(colors, ~ linear(tritan(.x), "hunterlab")),
         # Twice linear
         twice_linear = map_dbl(colors, ~ linear_split(.x, "hunterlab")),
         twice_linear_deutan = map_dbl(colors, ~ linear_split(deutan(.x), "hunterlab")),
         twice_linear_protan = map_dbl(colors, ~ linear_split(protan(.x), "hunterlab")),
         twice_linear_tritan = map_dbl(colors, ~ linear_split(tritan(.x), "hunterlab")),
```

```
# Min distance between points
min_distance = map_dbl(colors, ~ min_distance(.x, "hunterlab")),
min_distance_deutan = map_dbl(colors, ~ min_distance(deutan(.x), "hunterlab")),
min_distance_protan = map_dbl(colors, ~ min_distance(protan(.x), "hunterlab")),
min_distance_tritan = map_dbl(colors, ~ min_distance(tritan(.x), "hunterlab")),
# Max distance between points
max_distance = map_dbl(colors, ~ max_distance(.x, "hunterlab")),
max_distance_deutan = map_dbl(colors, ~ max_distance(deutan(.x), "hunterlab")),
max_distance_protan = map_dbl(colors, ~ max_distance(protan(.x), "hunterlab")),
max_distance_tritan = map_dbl(colors, ~ max_distance(tritan(.x), "hunterlab")),
# IQR distance between points
iqr_distance = map_dbl(colors, ~ iqr_distance(deutan(.x), "hunterlab")),
iqr_distance_deutan = map_dbl(colors, ~ iqr_distance(deutan(.x), "hunterlab")),
iqr_distance_tritan = map_dbl(colors, ~ iqr_distance(protan(.x), "hunterlab")),
iqr_distance_tritan = map_dbl(colors, ~ iqr_distance(tritan(.x), "hunterlab")))
)
```