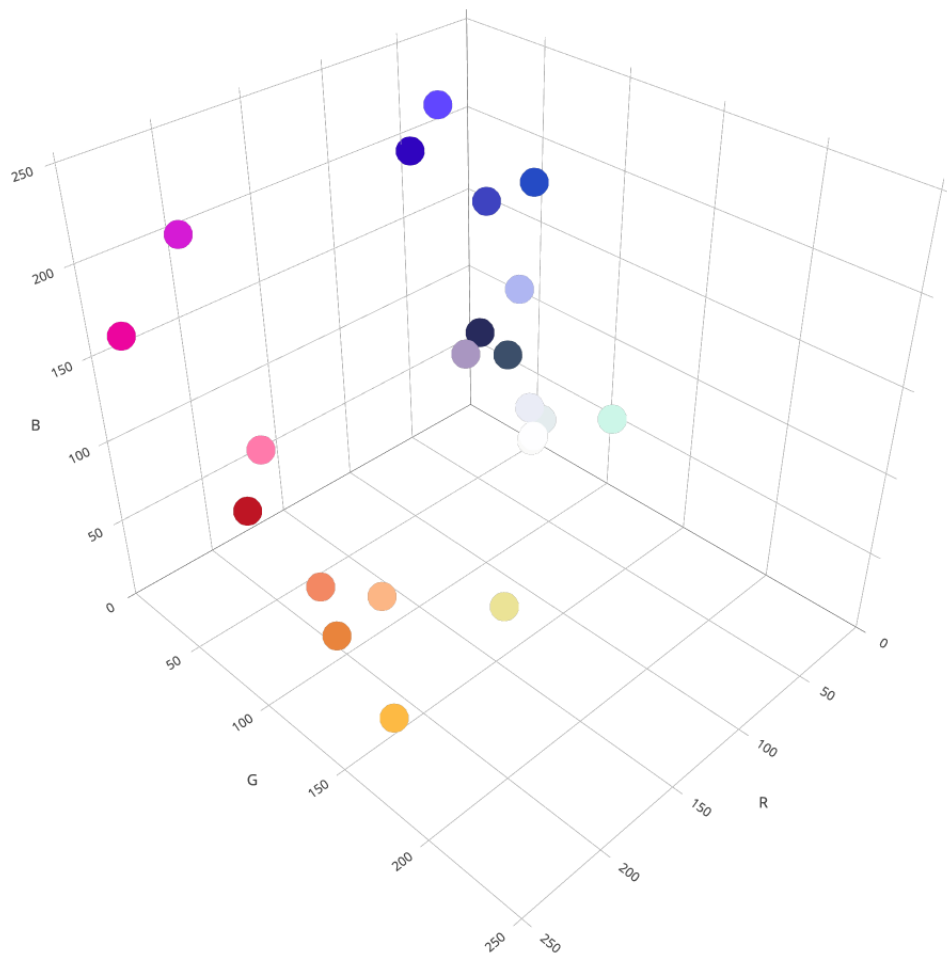


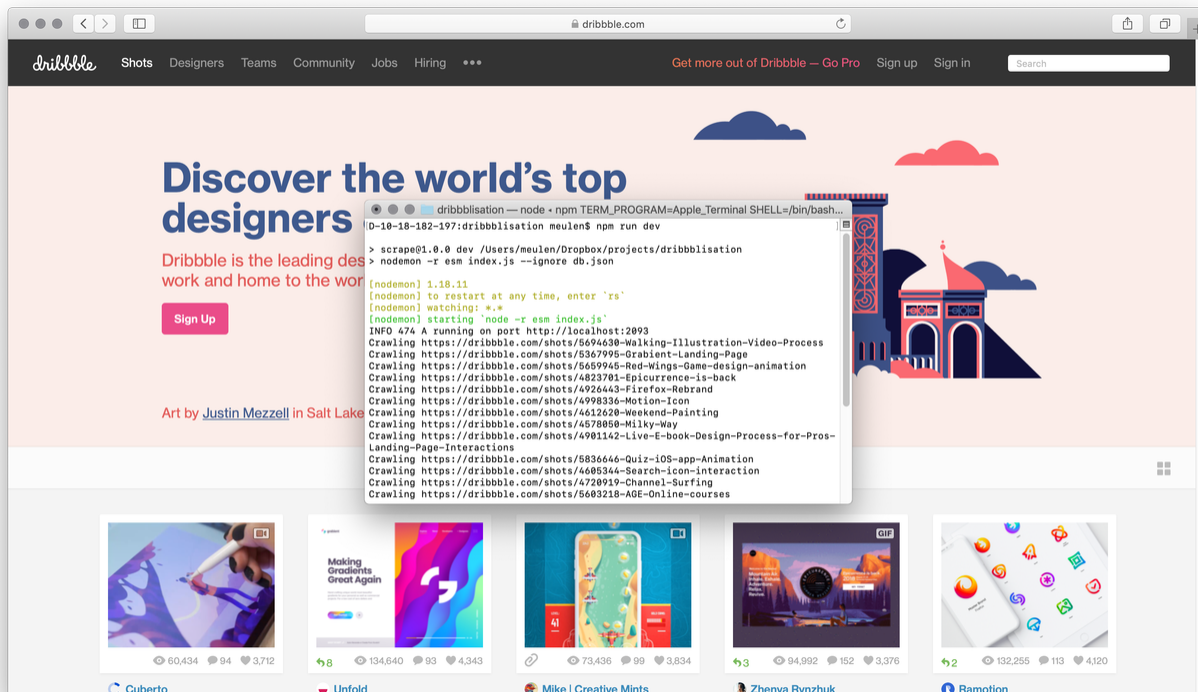
The Colors of the 22 Most Popular Dribbble Designs of 2018



Designers share their work on [Dribbble](#) to show it to the world and receive feedback. I was curious what makes a Dribbble “shot” popular. As it turns out, the most popular designs of 2018 used modern shades of blue, pink, and orange. They avoided pure

red, green, and bright yellow. One could confirm [there is a clear pattern in the type of designs Dribbble users reward](#).

Behind the Scenes: Scraping the Most Popular Shots



I first needed information about the most popular shots on Dribbble. The Dribbble API did not let me access this data. I wrote a custom scraper with Node.js, Express, cheerio, and lowdb to collect last year's most popular shots as a JSON object.

```
[
  {
    "title": "Walking Illustration Video Process",
    "author": "Cuberto",
    "views": 60433,
    "likes": 3712,
```

```
"saves": 721,  
"colors": [  
  "#382158",  
  "#281F99",  
  ...  
],  
"tags": [  
  "app",  
  "color",  
  ...  
]  
},  
...  
]
```

Focusing on Color

After collecting the data, I decided to focus on finding patterns in color usage. Color is one of the most important tools in a designer's toolkit. Besides, it is one of the few tangible properties we can compare designs on.

My scraped dataset had information about every shot's palette, with the exception for when a shot was a video. I removed every object that did not have an array of colors. That left me with 22 designs to work with.

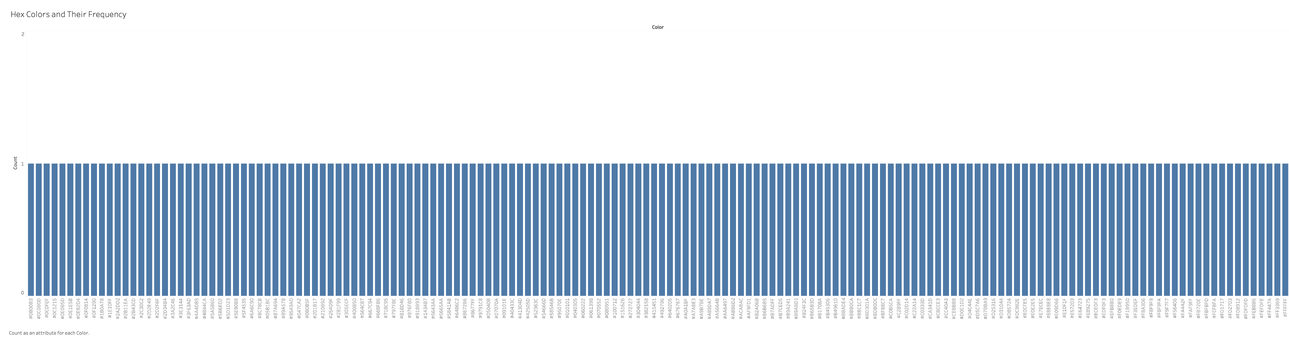
A Quick Survey of the Data

I wanted to get a sense of my data before I started visualizing it. I decided to count every hex value to see if any occurred more than once. To do this, I made a new server endpoint that converts input to a csv file, and counted hex values using a `forEach` loop. Not surprisingly, every hex value only occurred once.

```
"color","count"
```

```
"#382158",1
"#281F99",1
"#5B6ED2",1
"#100712",1
"#5665AA",1
...

```



Categorizing Colors using Euclidean Distance

Counting hex values was too naive of an approach to see patterns in the color usage. I decided to classify every hex value as a color (“red”, “pink”, etc.) by measuring their Euclidean Distance to the Material Design colors in Lab color space. I chose to compare them to Material Design colors because it provided a limited yet specific palette. Additionally, Google’s colors are closer to designers’ expectations than colors defined by other parties such as W3C. For example, standard HTML green is not a color anyone would use in their work, whereas Material Design green is.

I also decided to start plotting my results in 3D using Plotly.js. My bar charts provided a good overview but failed to capture how designers used different shades of the same color. To use Plotly, I wrote another endpoint that converted every color into 3 coordinates (r, g, b) using chroma.js

```
const materialDesignColors = [
  {
    name: "red",

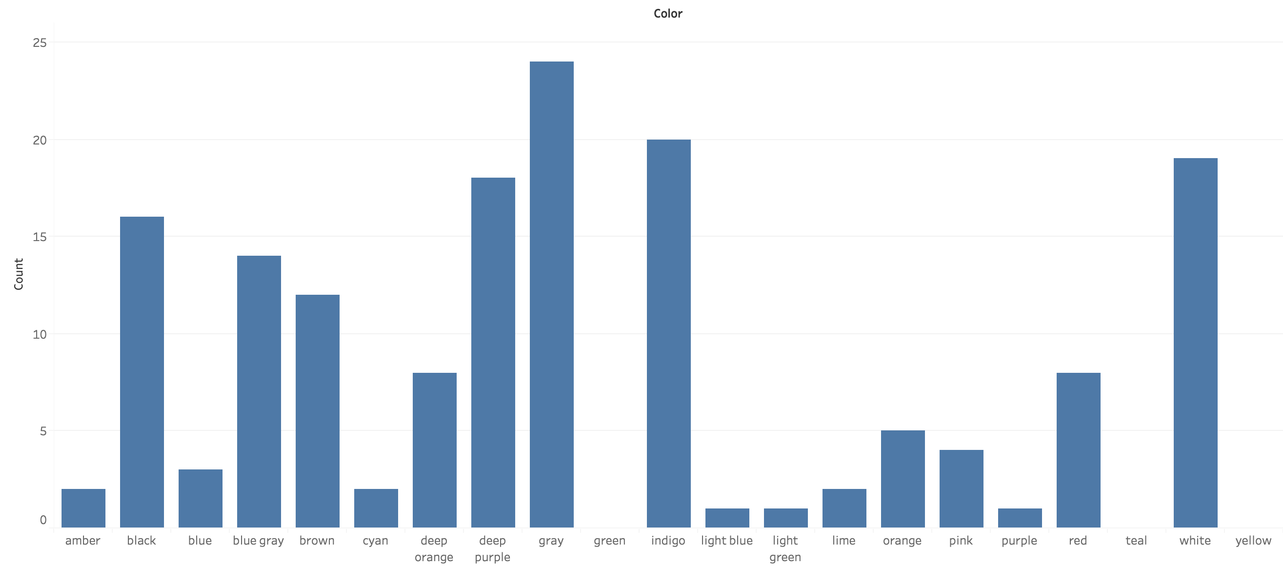
```

```
        hex: "#f44336"  
    },  
    {  
        name: "pink",  
        hex: "#e91e63"  
    },  
    ...  
];
```

```
"name","count"  
"black",16  
"white",19  
"red",8  
"pink",4  
"purple",1  
"deep purple",18  
"indigo",20  
"blue",3  
"light blue",1  
"cyan",2  
"teal",0  
"green",0  
"light green",1  
"lime",2  
"yellow",0  
"amber",2  
"orange",5  
"deep orange",8  
"brown",12  
"gray",24
```

"blue gray",14

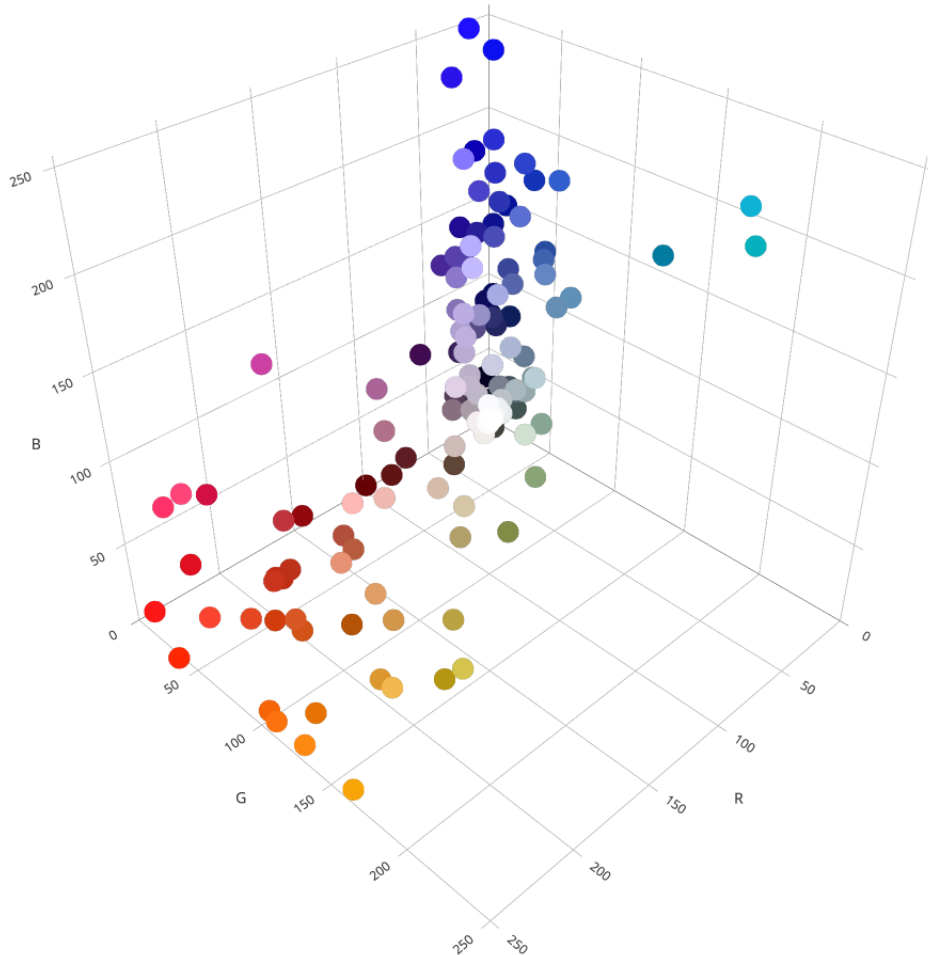
Color and the Most Popular Designs of 2018



Count as an attribute for each Color.

```
[
  {
    "r": 56,
    "g": 33,
    "b": 88
  },
  {
    "r": 40,
    "g": 31,
    "b": 153
  },
  ...
]
```

Color and the Most Popular Designs of 2018

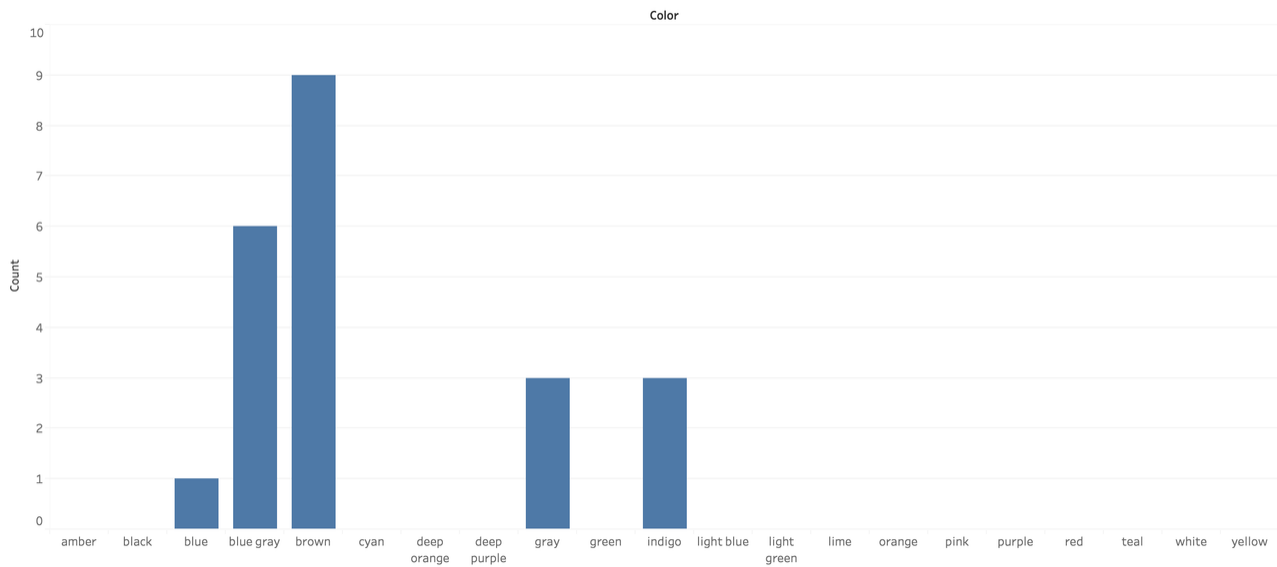


Normalizing the Influence of a Design's Palette

Some patterns became clear. Almost no popular shot used green. However, I realized that shots for which I had more palette information (hex codes) were affecting my visualization more than shots for which I had less information. I wanted to make sure that my visualization was a fair survey of color usage across the most popular designs. Every design had to affect the graphic equally.

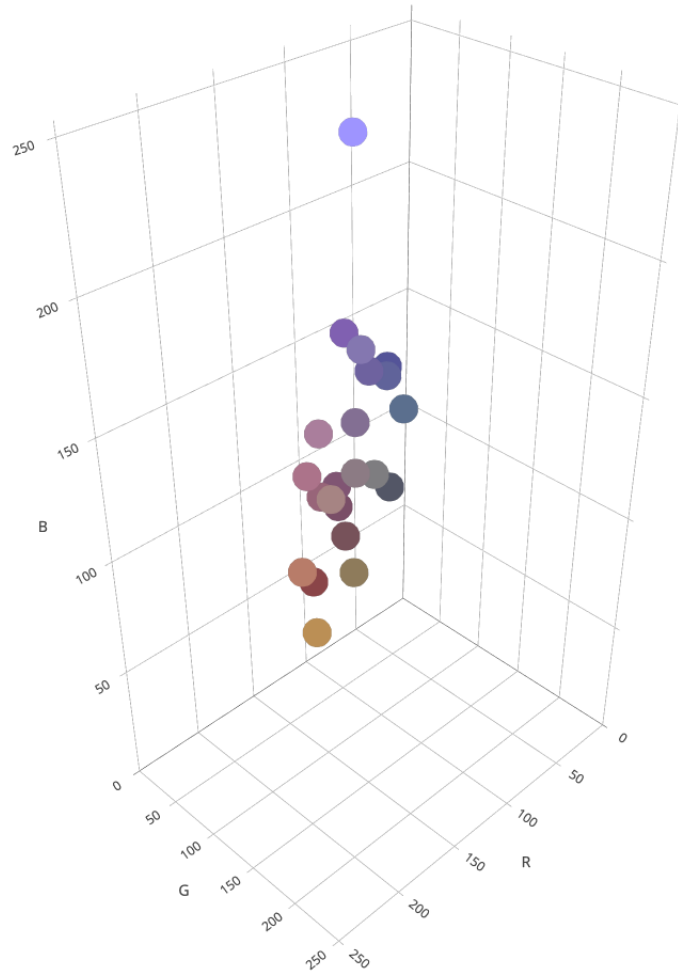
My first idea was to take the average color of every palette.

Color and the Most Popular Designs of 2018



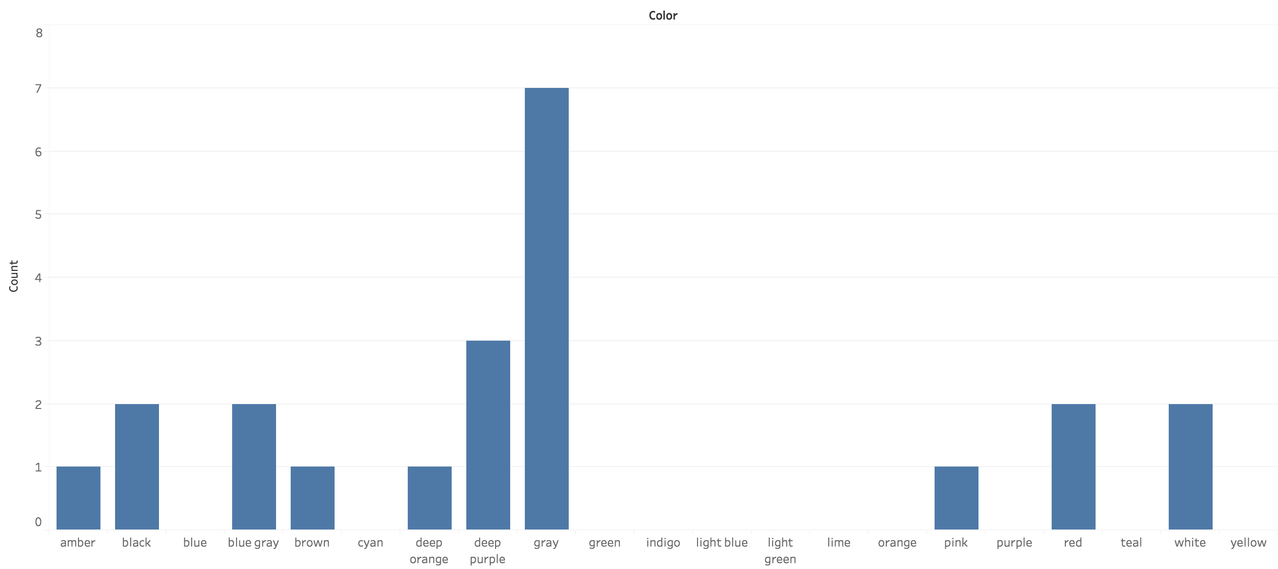
Count as an attribute for each Color.

Color and the Most Popular Designs of 2018



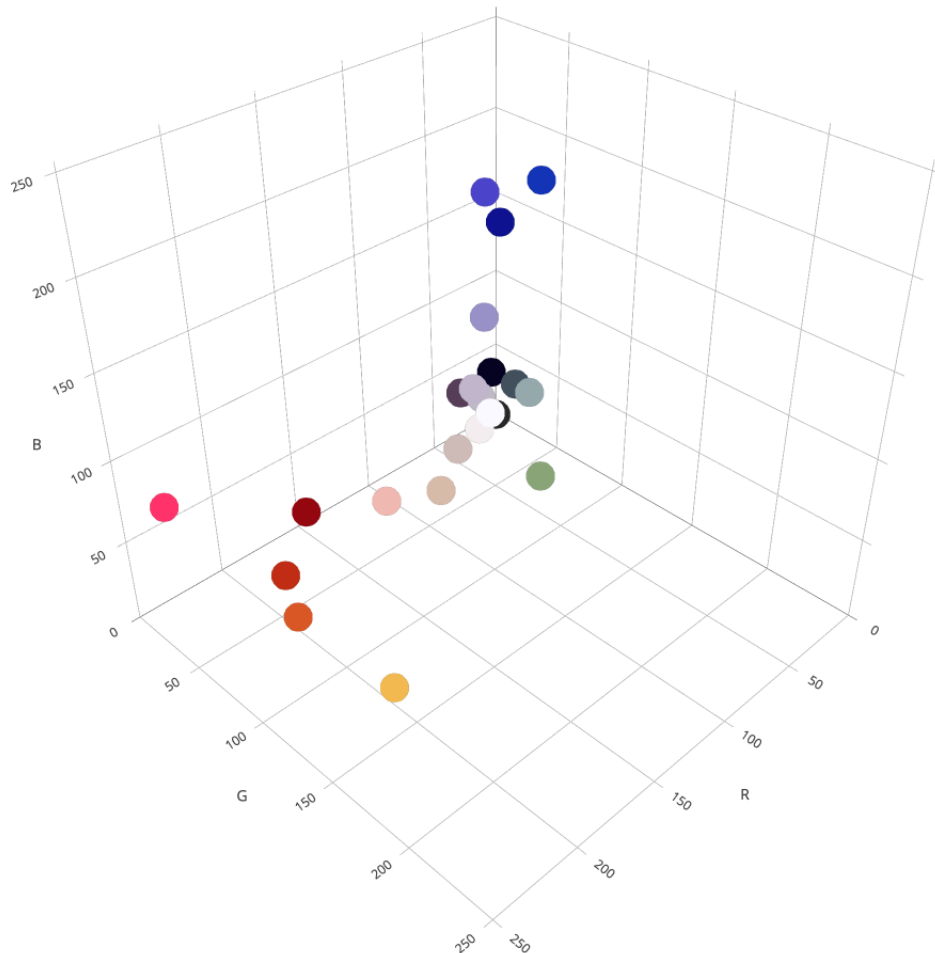
The problem with this approach was that the average color of any palette is likely to be brown. None of the most popular shots relied heavily on brown. I needed a different approach. Perhaps I could randomly sample one color from every palette?

Color and the Most Popular Designs of 2018



Count as an attribute for each Color.

Color and the Most Popular Designs of 2018



Randomly sampling a color from every shot's palette painted a more realistic landscape than taking the average. Nonetheless, it was a flawed technique. The visualization and resulting conclusion would be different every time I ran my code.

Collecting Better Data using Computer Vision

I talked to Alex Kale about how to equally yet accurately represent every shot's palette. He gave me a great set of options. I decided to create a new dataset with every shot's most dominant color. Unfortunately, my original Dribbble data did not

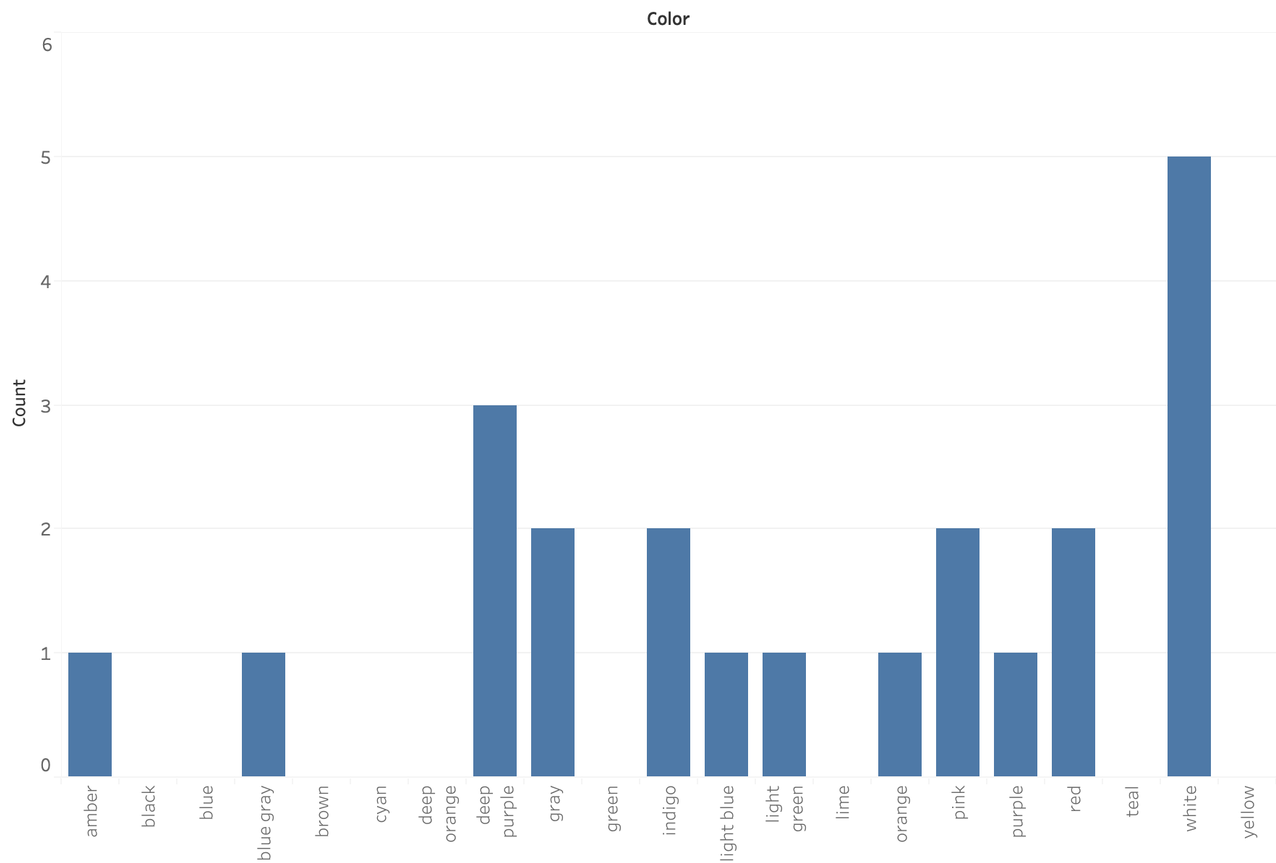
contain this information. Hence, I used the Google Vision API to collect a shot's most dominant color myself.

```
const client = new vision.ImageAnnotatorClient();
const [result] = await client.imageProperties(link);
const colors = result.imagePropertiesAnnotation.dominantColors.colors;
```

For any image, the Google Vision API returns both a score and a pixel fraction. The pixel fraction measures how much of the design the color occupies. I decided to use the score metric because it also takes into account an image's focus.

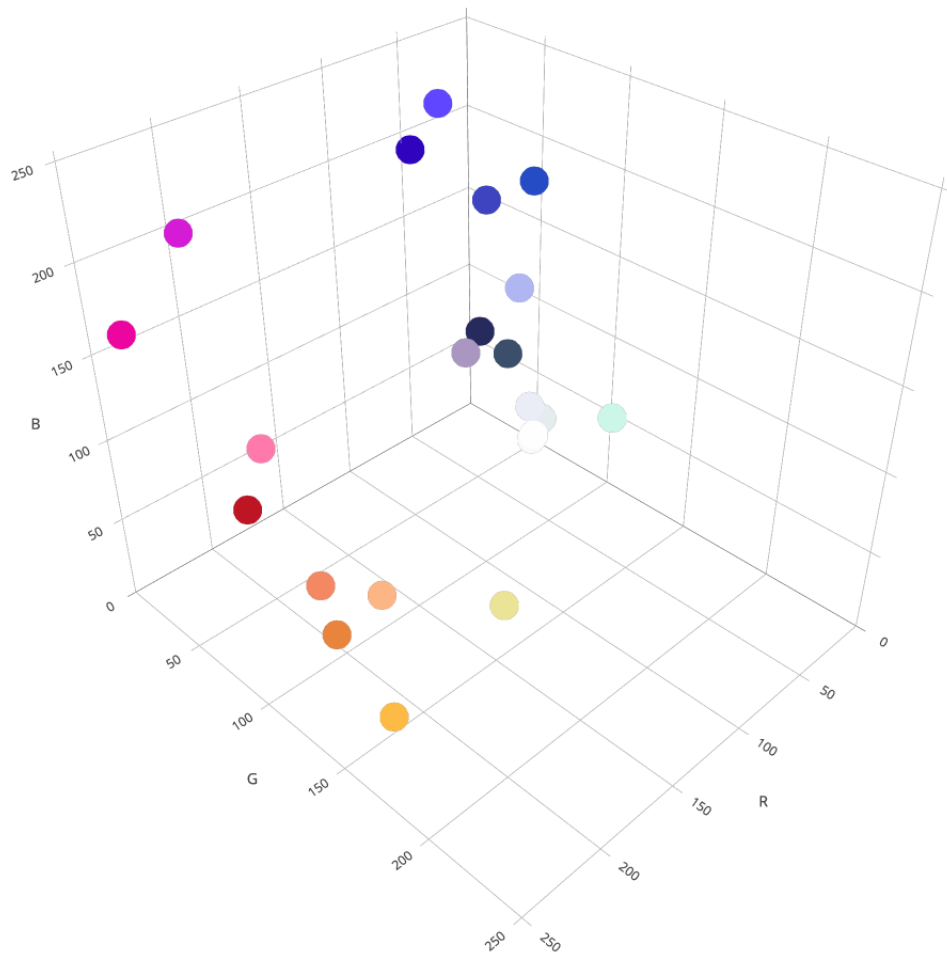
```
[
  {
    color: { red: 234, green: 236, blue: 246, alpha: null },
    score: 0.15947113931179047,
    pixelFraction: 0.07934121787548065
  },
  ...
]
```

Color and the Most Popular Designs of 2018



Count as an attribute for each Color.

Color and the Most Popular Designs of 2018



Finishing Touches

The new data set and corresponding 3D visualization revealed clear patterns about color usage in the most popular designs of 2018. They all used modern shades of blue, pink, and orange, while avoiding pure red, green, and bright yellow. For clarity, I added a more descriptive title and white space in Sketch.

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