

## Using CNNs for Detecting Counterfeit Currency

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### Data Appendix

**Roboflow Computer Vision Project Dataset:** this dataset includes 2174 images of real and counterfeit United States currency in every denomination, as well as annotations on the characteristics of each bill. We also performed wavelet transformations to examine features of each bill.

Category Annotation Variables:

- id: unique identifier for each bill category
- name: the name of the category for each bill (ex. “Counterfeit fifty dollars” or “Genuine two dollars”)
- supercategory: supercategory for each bill class. Same for all categories - “USD” for United States Dollars

Annotation Variables:

- id\_image: unique identifier for each image
- file\_name: name of the image file
- height: height in pixels of the image
  - No missing observations
  - Minimum: 1381
  - 1st Quartile: 1474
  - Median: 1565
  - Mean: 1583
  - 3rd Quartile: 1689
  - Maximum: 1865
- width:
  - No missing observations
  - Minimum: 2947
  - 1st Quartile: 3066
  - Median: 3066
  - Mean: 3293
  - 3rd Quartile: 3608
  - Maximum: 4032
- extra\_name: shortened name of the image file
- category\_id: bill category
  - No missing observations

category_id	Bill Type	Count
1	Counterfeit fifty dollars	150
2	Counterfeit five dollars	150
3	Counterfeit one dollar	149
4	Counterfeit one hundred dollars	150

5	Counterfeit ten dollar	225
6	Counterfeit twenty dollars	150
7	Counterfeit two dollars	150
8	Genuine fifty dollars	150
9	Genuine five dollars	150
10	Genuine one dollar	150
11	Genuine one hundred dollars	150
12	Genuine ten dollars	150
13	Genuine twenty dollars	150
14	Genuine two dollars	150

- bbox: bounding box of the bill [x, y, width, height]
  - No missing observations
- area: product of width and height in pixels
  - No missing observations
  - Minimum: 3358285
  - 1st Quartile: 3632850
  - Median: 3921525
  - Mean: 4347445
  - 3rd Quartile: 5120318
  - Maximum: 7060032