

# Redes Neurais Convolucionais

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# Overview I

- 1 Base de Dados
  - CIFAR100
- 2 Análise Exploratória dos Dados
- 3 Redes Neurais Convolucionais
- 4 Experimentos
  - Métricas

# Base de Dados

## CIFAR100

- **aquatic mammals:** beaver, dolphin, otter, seal, whale
- **fish:** aquarium fish, flatfish, ray, shark, trout
- **flowers:** orchids, poppies, roses, sunflowers, tulips
- **food containers:** bottles, bowls, cans, cups, plates
- **fruit and vegetables:** apples, mushrooms, oranges, pears, sweet peppers
- **household electrical devices:** clock, computer keyboard, lamp, telephone, television
- **household furniture:** bed, chair, couch, table, wardrobe
- **insects:** bee, beetle, butterfly, caterpillar, cockroach
- **large carnivores:** bear, leopard, lion, tiger, wolf
- **large man-made outdoor things:** bridge, castle, house, road, skyscraper
- **large natural outdoor scenes:** cloud, forest, mountain, plain, sea
- **large omnivores and herbivores:** camel, cattle, chimpanzee, elephant, kangaroo

- **medium-sized mammals:** fox, porcupine, possum, raccoon, skunk
- **non-insect invertebrates:** crab, lobster, snail, spider, worm
- **people:** baby, boy, girl, man, woman
- **reptiles:** crocodile, dinosaur, lizard, snake, turtle
- **small mammals:** hamster, mouse, rabbit, shrew, squirrel
- **trees:** maple, oak, palm, pine, willow
- **vehicles 1:** bicycle, bus, motorcycle, pickup truck, train
- **vehicles 2:** lawn-mower, rocket, streetcar, tank, tractor

- Quantidades de Imagens por Classes
- Imagem Média

# Redes Neurais Convolucionais

- O Nosso Modelo
- Lenet
- AlexNet

- Precision:

$$\frac{A_c}{A_c + A_e} \quad (1)$$

- Accuracy

$$\frac{\sum_1^n A_c}{\sum_1^n A_t} \quad (2)$$

- Recall Score

$$\frac{A_c}{A_t} \quad (3)$$

- F1 Score

$$\frac{2 \cdot (precision \cdot recall)}{precision + recall} \quad (4)$$

- CIFAR10
- Treinando os Modelos
- Apenas um Epoch
- Limitando os Dados
- Sem Normalização
- LeNet com ReLu



- Comparação Entre os Modelos
- Conclusões e Discussões