Machine Learning Project - Hand-To-Age (H_2A)

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MSc Health Data Analytics & Machine Learning

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Project description

Data

Data source: Radiology Society of North America(RSNA) and Radiology Informatics Committee (RIC). Available in Kaggle. Images gathered by several

Dataset: 12,621 images of individuals aged between 1 month and 19 years (228 months) old. Gender and age available for all fo them.

Context: Images gathered for the Pediatric Bone Age ML Challenge.

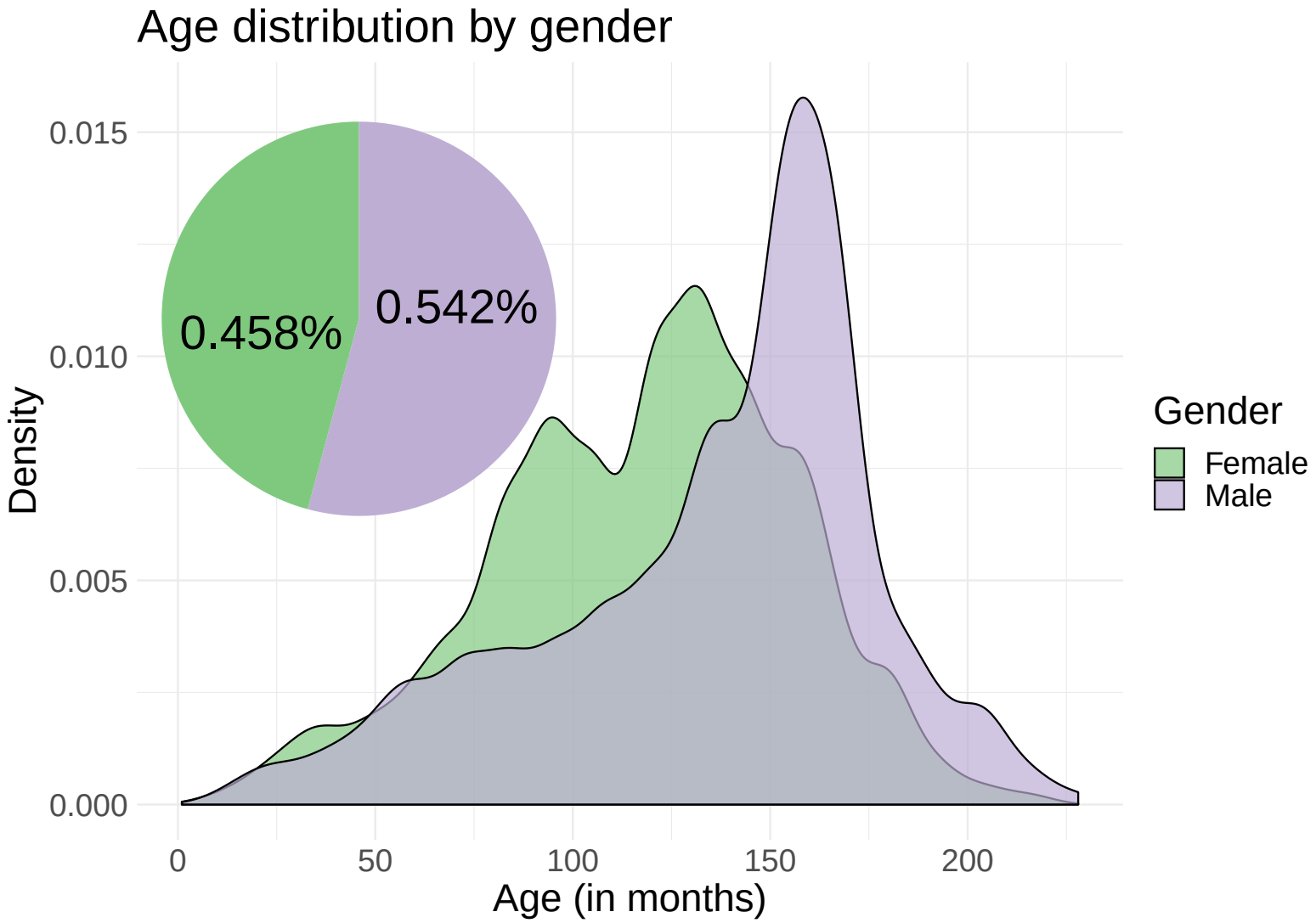
Aim(s) of my study

Supervised question #1: *How close can we estimate age from images only?*

Supervised question #2: *Can gender be derived from the image?*

Unsupervised question: *Can clustering algorithm accurately group together individuals by gender*

Population statistics



The images

X-ray images of each individuals' hand (one or two - information not available)

- Difficulties:
  - Varying resolution (plot)
  - Varying contrast
  - Some scanned and some digital images
- Advantages:
  - Standardised medical images

Let's have a look at some pictures!

Slide with R Output

POTATO

```
summary(cars)
```

```
##      speed           dist       
##  Min.   : 4.0   Min.   :  2.00  
##  1st Qu.:12.0   1st Qu.: 26.00  
##  Median :15.0   Median : 36.00  
##  Mean   :15.4   Mean   : 42.98  
##  3rd Qu.:19.0   3rd Qu.: 56.00  
##  Max.   :25.0   Max.   :120.00
```

Slide with Plot