

# SIFT & CNN

SIFT and CNN slides for the project contribution in relation to the  
HEp-2 Cells Dataset

# SIFT (Scale-Invariant Feature Transform)

- SIFT detects keypoints invariant to scale, rotation, and lighting.
  - Keypoints
    - Typically corners and edges.
    - Composed of:
      - A pixel.
      - Scale, such as a 4x4 area around the pixel.
      - Orientation, which is Gradient related.
  - Descriptors
    - Vector representation summarizing the information around the keypoint.

# CNN (Convolutional Neural Network)

- Excel at identifying spatial hierarchies of features within images.
- Composed of several interconnected layers.
  
- Build the Model
- Train the Model
- Validate the Model with Hyperparameters and Metrics
- Test the model, mainly testing the validation phase