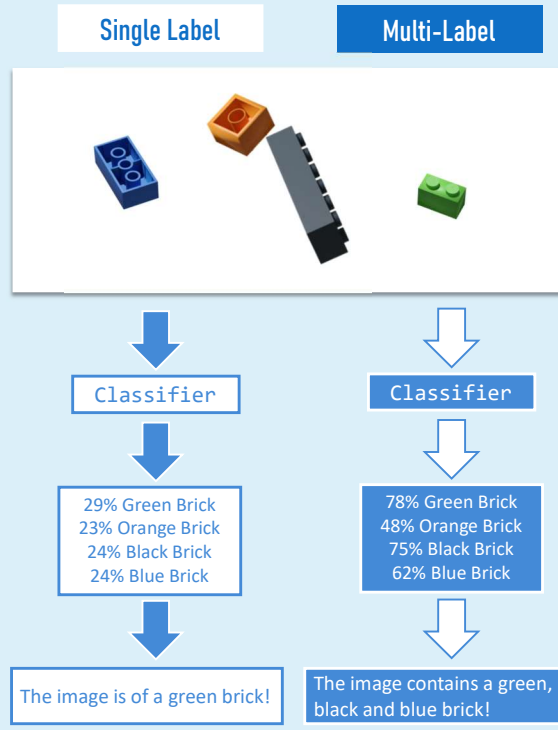


# The Current State of the Art in Multi-Label Image Classification Applied on LEGO Bricks

## Background

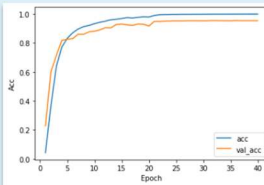
- How well does the state of the art in image classification work on LEGO bricks?
- Transform single label into multi-label
- Single label classifier vs multi-label classifier



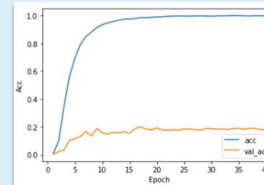
## Results

- ResNet, WideResnet, ResNext
- F1-Score
- 5 experiments

Validation 10.000 Cut and Paste



Validation 3.000 Real



Trained	Tested	ResNet	WideResnet	ResNext
Synthetic 5.000	Synthetic	90%	91%	93%
Cut and Paste 5.000	Cut and Paste	92%	93%	94%
Real 3.000	Real	19%	15%	21%
Synthetic 3.000	Real	32%	28%	39%
Cut and Paste 3.000	Real	48%	47%	44%
Cut and Paste 10.000	Real	55%	53%	52%

## Conclusion

- ResNext works best
- Performs well on synthetic and cut and paste data
- Does not perform so well on real data
- More data is better
- Current state of the art is good!
- Dataset too small

