DIGITAL TALENT PROJECT

I FEEL YOU

Facial Expression Recognition Using CNN

Food for Thought

AI WILL WORK WITH HUMANS AS ANALYTICAL TOOL, THAT HUMANS CAN WRAP THEIR WARMTH AROUND

KAI FU LEE

PRESENTATION FLOW

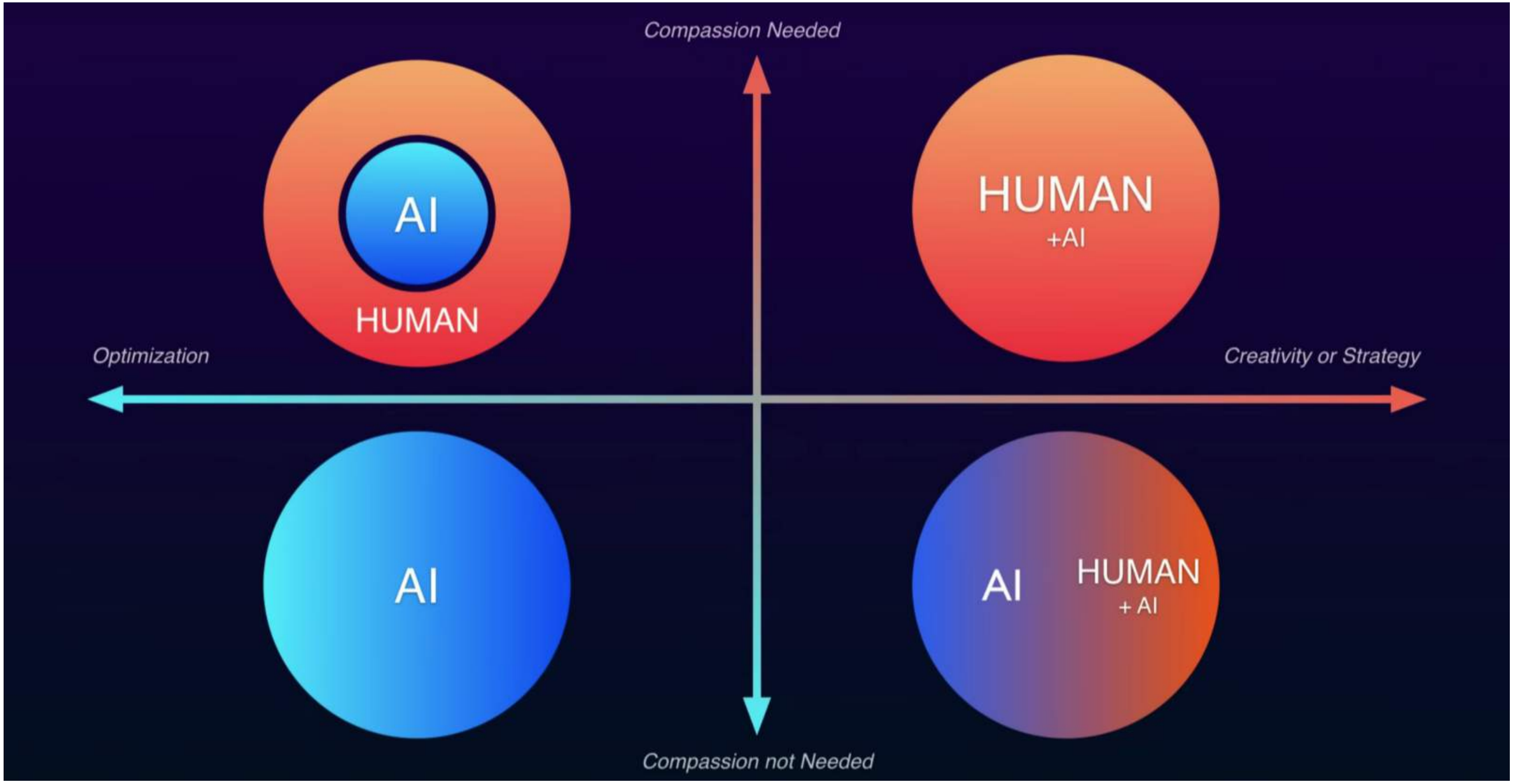
Points of Discussion

Introduction
Problems
Customer Experience Development Tool
Fast Facts
Convolutional Neural Network Model
Facial Expression Recognition on Streaming Data
Results and Comparisons
Evaluation and Conclusion
Group Members
Sources and Libraries
References

INTRODUCTION

I FEEL YOU

Facial expression recognition using simple Convolutional Neural Network model to classify perceived images to several category.


Compassion Needed
AI
HUMAN
HUMAN
+AI
Optimization
Creativity or Strategy
AI
AI
HUMAN
+ AI
Compassion not Needed

PROBLEMS

I FEEL YOU

We need to know humans emotion based on facial expression to develop customer experience business model.

CUSTOMER EXPERIENCE DEVELOPMENT TOOL

I FEEL YOU

A tool to effectively collect numerous data of humans emotion.

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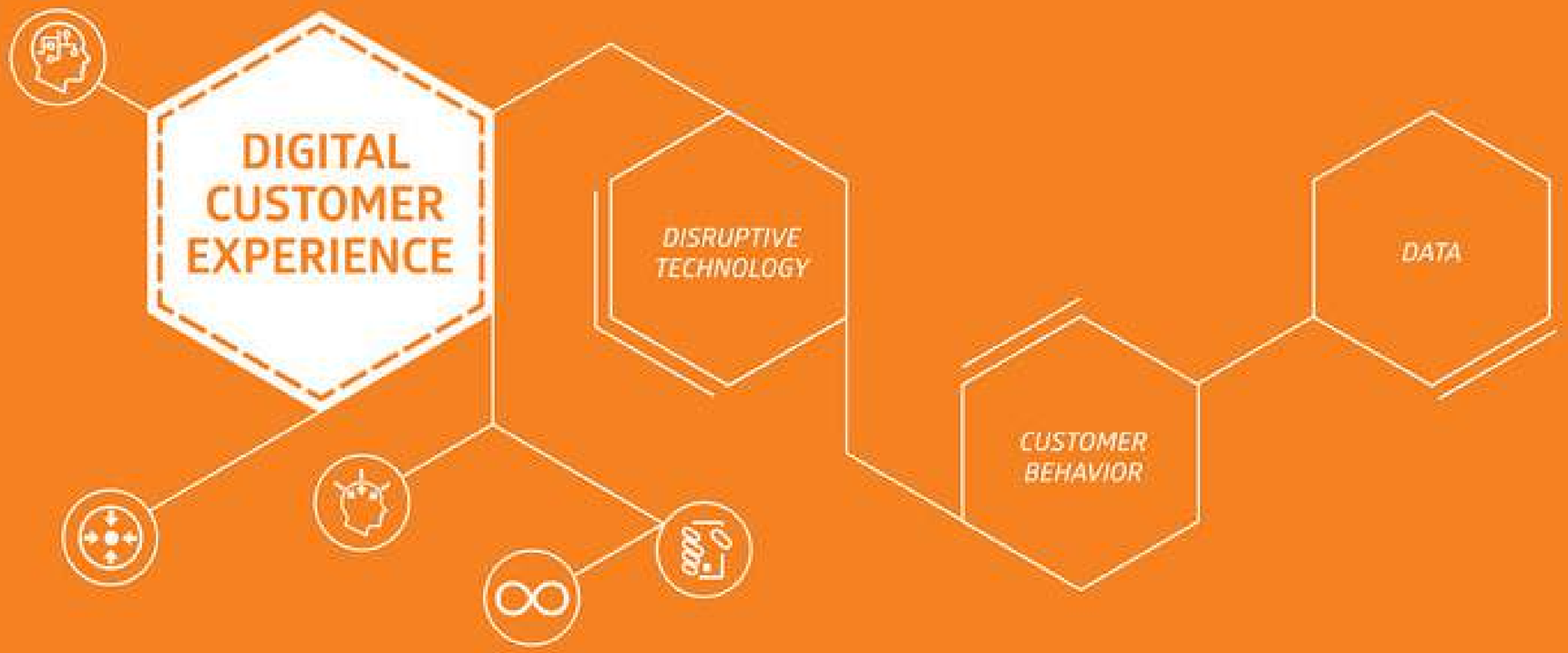
DIGITAL CUSTOMER EXPERIENCE CONSIDERATIONS FOR STRATEGISTS



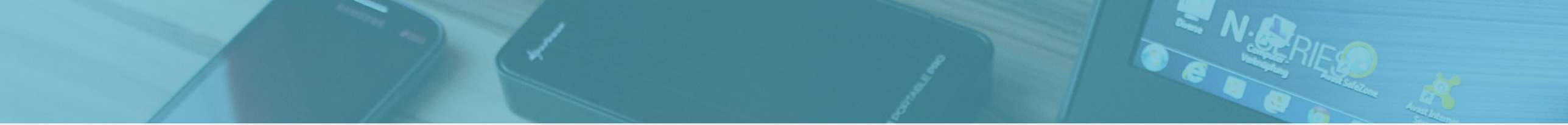
HOLISTIC CX FOCUS
Companies must move beyond social, mobile, or a trendy technology focus and rethink the entire customer journey and experience.

CULTURE OF INNOVATION
Journey mapping can lead to unplanned product or service innovations that reflect new customer needs and behaviors.

DATA INTEGRATION
Technology and new roles are needed to analyze data, connect it to respective business groups, and present it in ways that are meaningful and actionable.

INTERNAL COLLABORATION
Mapping the existing customer journey leads to insights on where departments can work together to improve it from the inside out.

"DIGITAL-FIRST" MINDSET
Evolving from a mobile-first, to digital-first, to an ultimate CX approach is necessary to bring about meaningful transformation. It's a philosophy that sets out to see and solve for sweeping trends and opportunities throughout the entire digital customer lifecycle.

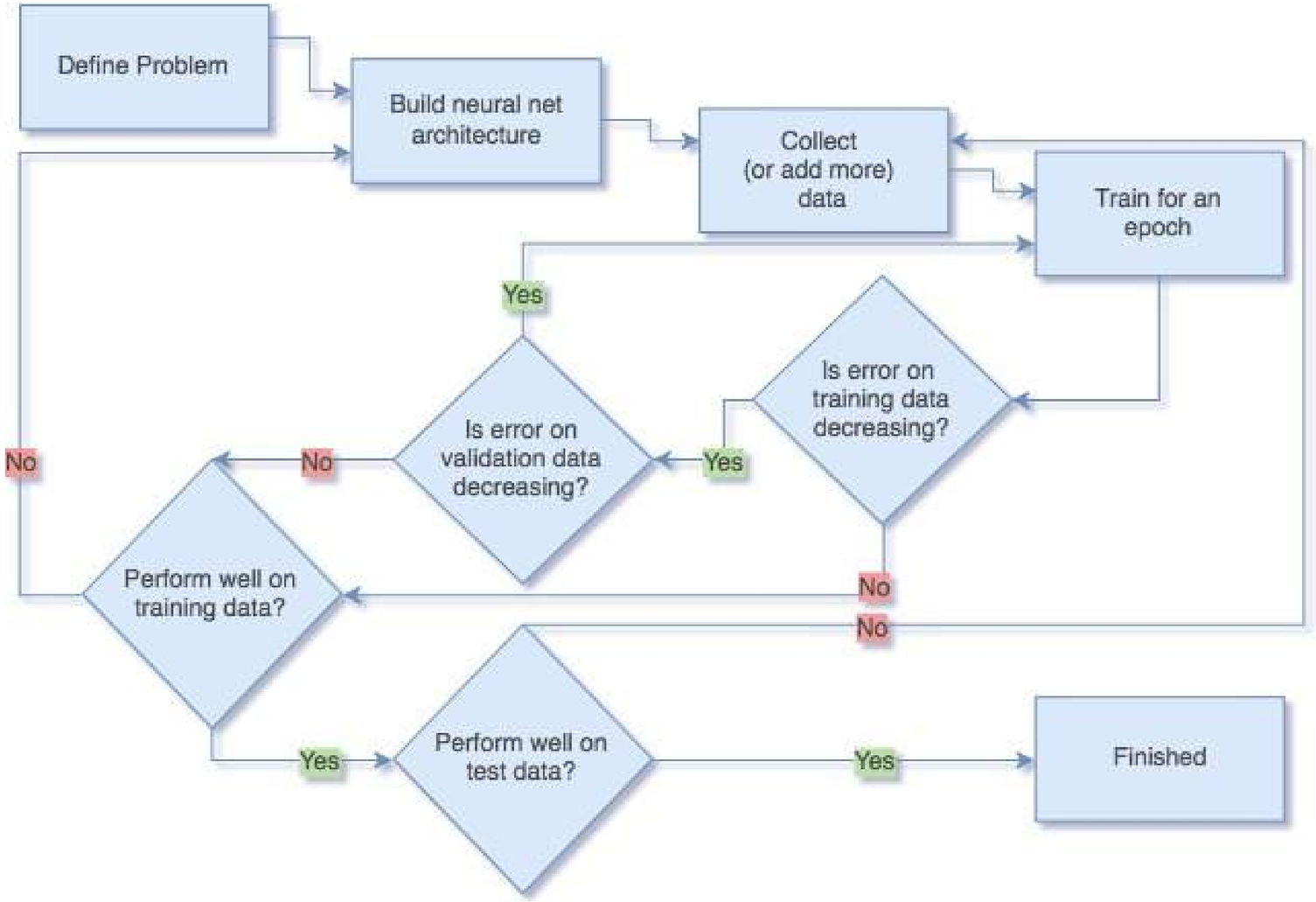


FAST FACTS

- CX will become the key brand differentiator by 2020
- CX excellence allows companies to outperform competitors
- Consumers pay more to ensure a superior customer experience
- Customers need quality customer service
- CX will ultimately eliminate the need for human interaction
- Multi-/omni-channel presence will be the driving force
- CX can be improved if complaints are quickly resolved
- Self-service adoption is on the rise
- The purchase process determines sales
- Customer experience has rippling effects

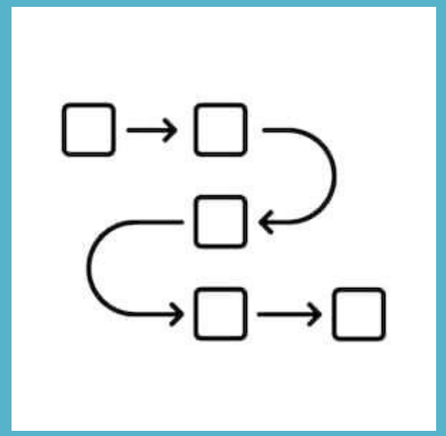

INTO
THE DEEP

CONVOLUTIONAL NEURAL NETWORK MODEL

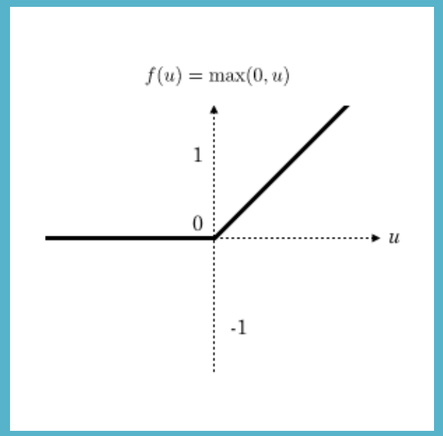


CNN MODEL

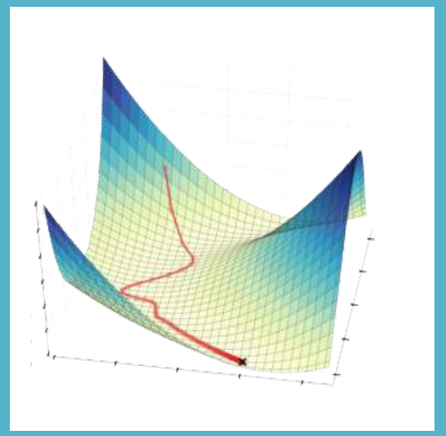
Why It's Better



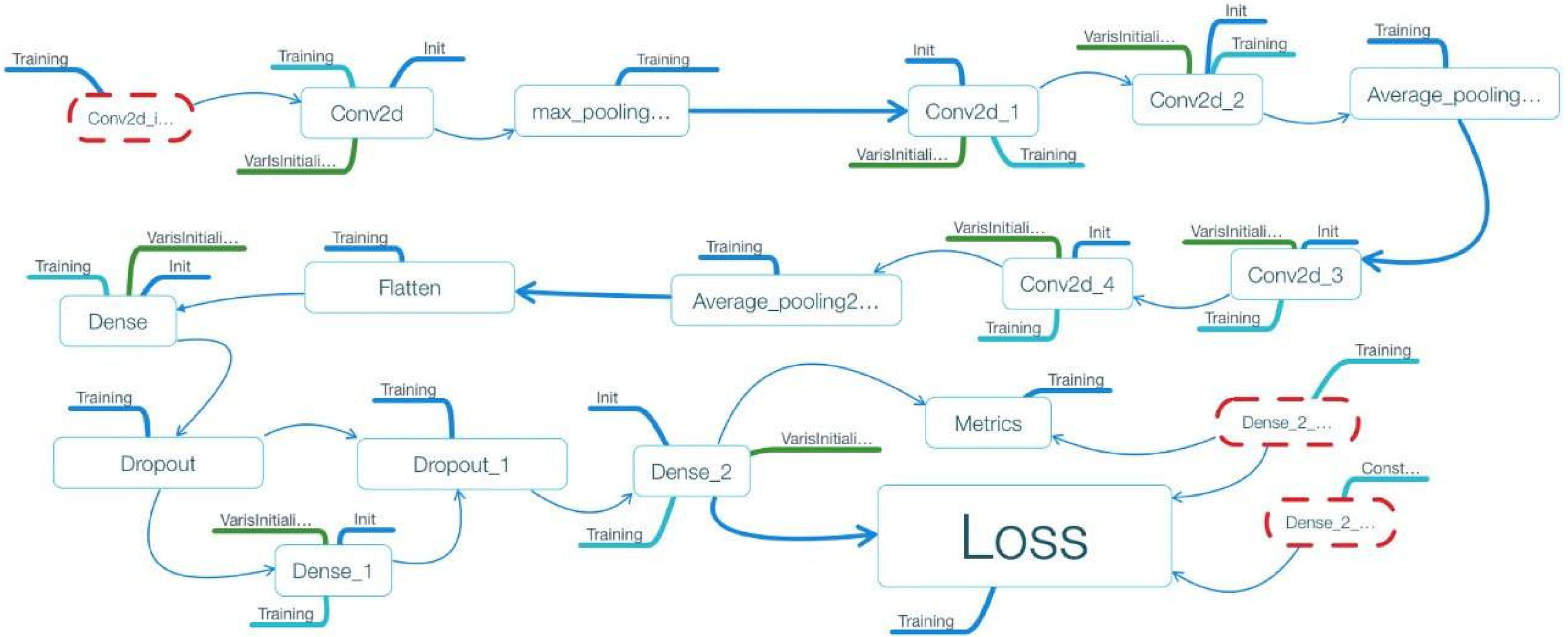
Keras Sequential Model, linear stack of layers



ReLU Activation



Adam Optimizer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Loss
Training

FACIAL EXPRESSION RECOGNITION ON STREAMING DATA

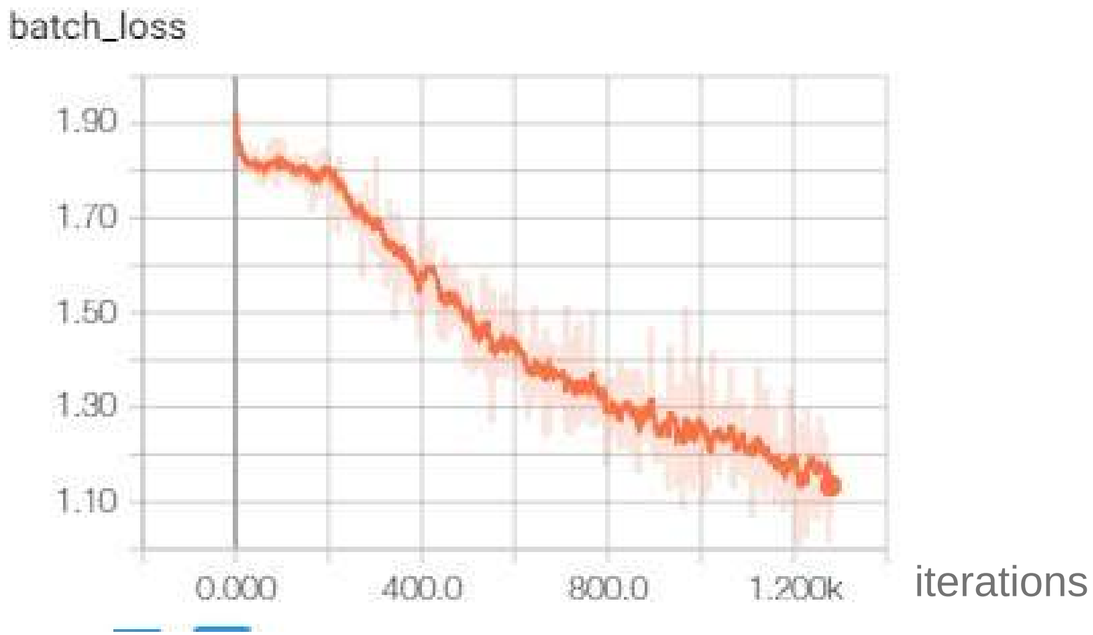
DIGITAL TALENT PROJECT

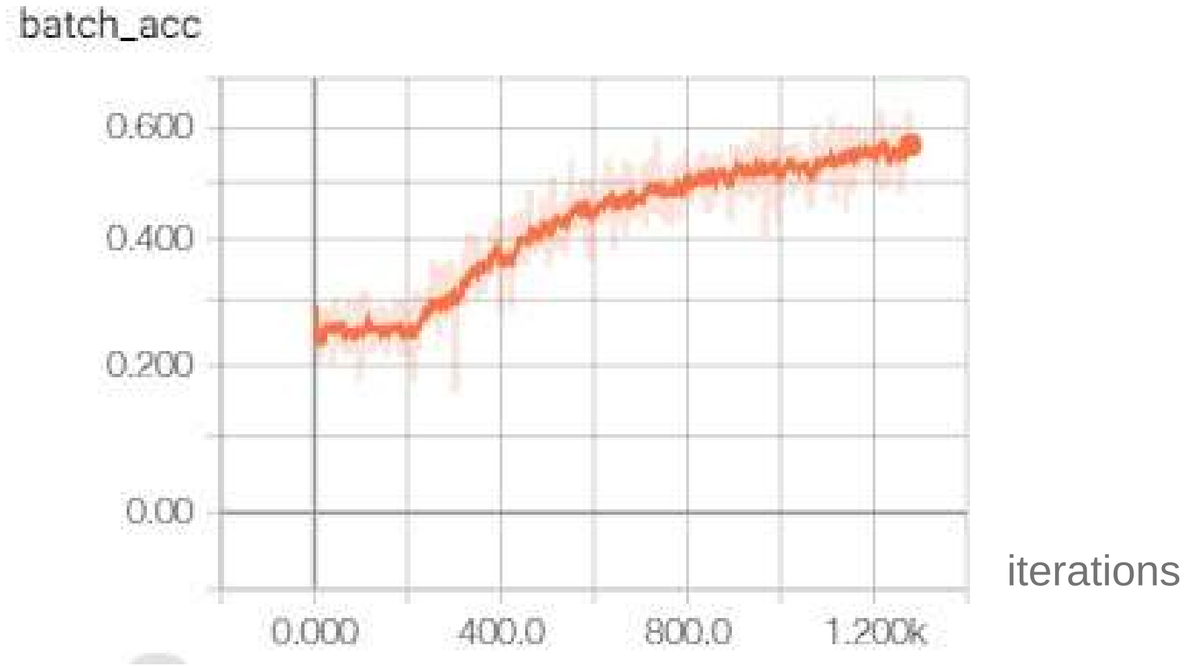
Demo

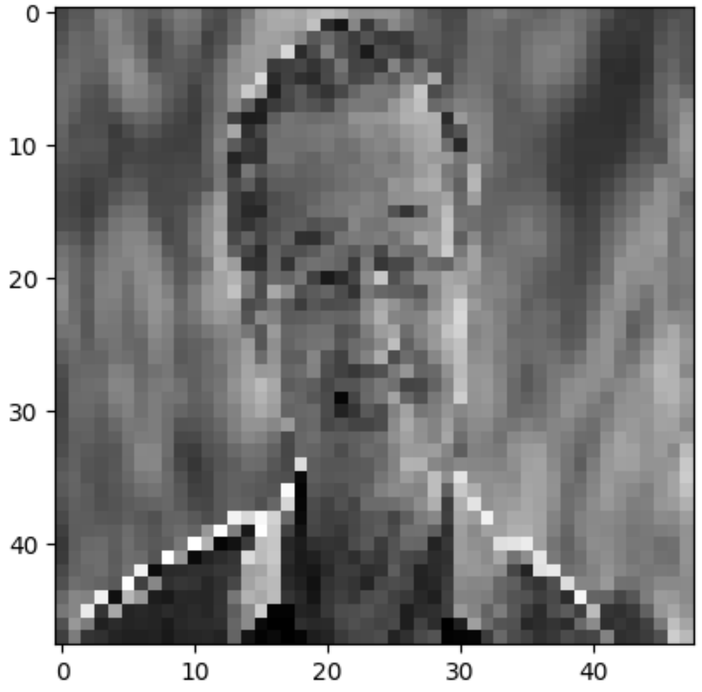
CNN MODEL
RESULT AND COMPARISON

```
(base) C:\Users\CaturwahyuRP\Pelatihan Digital Talent\Project\Kaggle>python 123.py
Using TensorFlow backend.
2018-12-02 17:29:20.449979: I tensorflow/core/platform/cpu_feature_guard.cc:141] Your CPU supports instructions that this
TensorFlow binary was not compiled to use: AVX AVX2
number of instances:  35888
instance length:  2304
28709 train samples
3589 test samples
Epoch 1/5
256/256 [==============================] - 549s 2s/step - loss: 1.7924 - acc: 0.2559
Epoch 2/5
256/256 [==============================] - 592s 2s/step - loss: 1.5935 - acc: 0.3638
Epoch 3/5
256/256 [==============================] - 584s 2s/step - loss: 1.4120 - acc: 0.4551
Epoch 4/5
256/256 [==============================] - 509s 2s/step - loss: 1.2907 - acc: 0.5065
Epoch 5/5
256/256 [==============================] - 513s 2s/step - loss: 1.2072 - acc: 0.5416
```

CNN MODEL
RESULT AND COMPARISON



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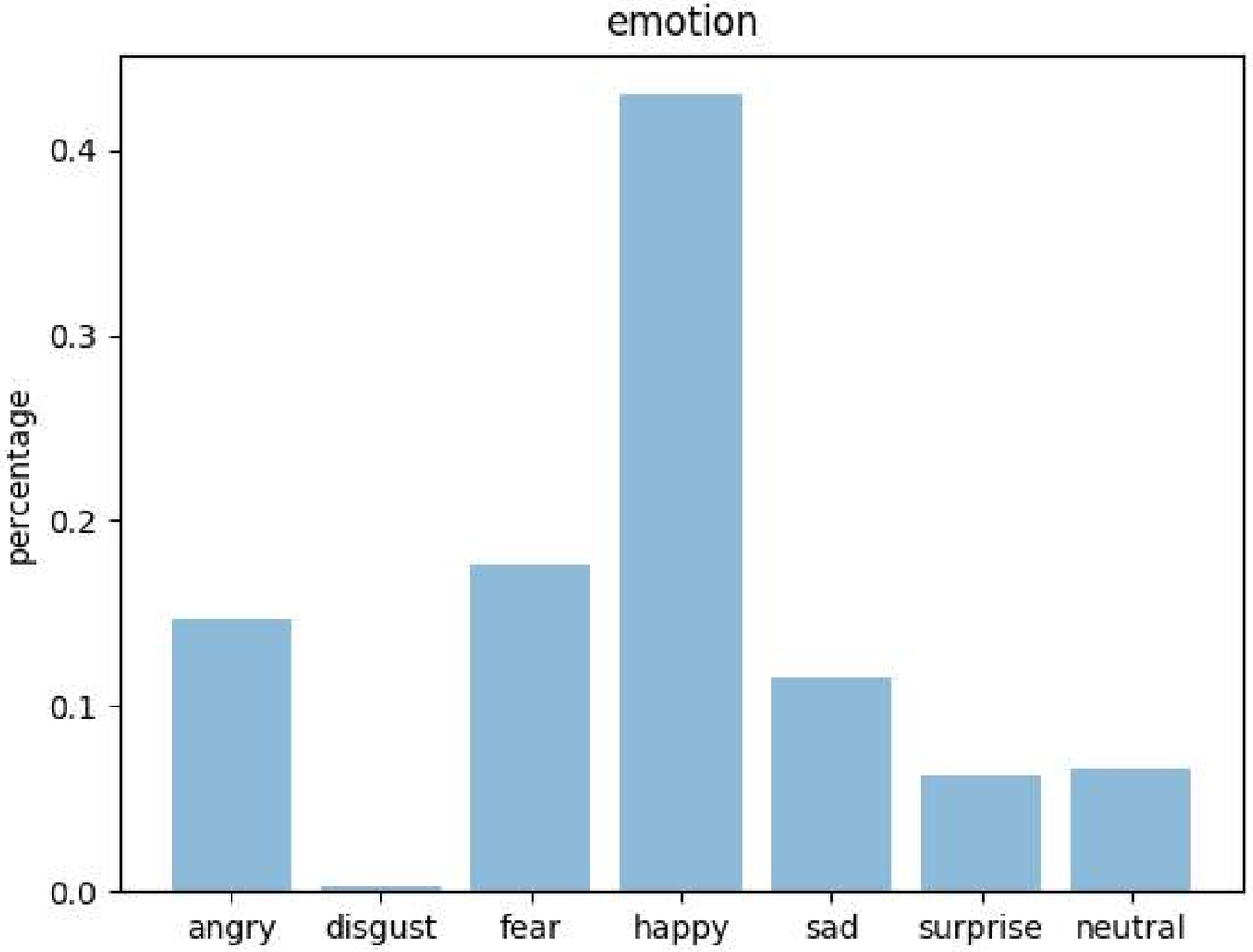
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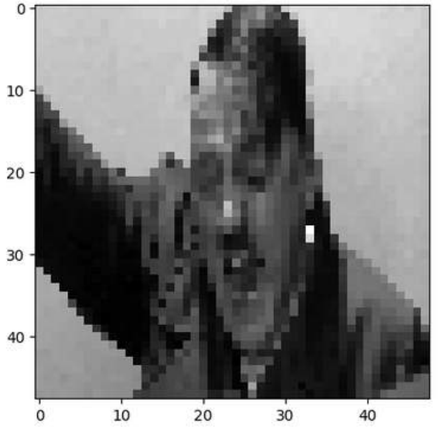
sad
surprise
neutral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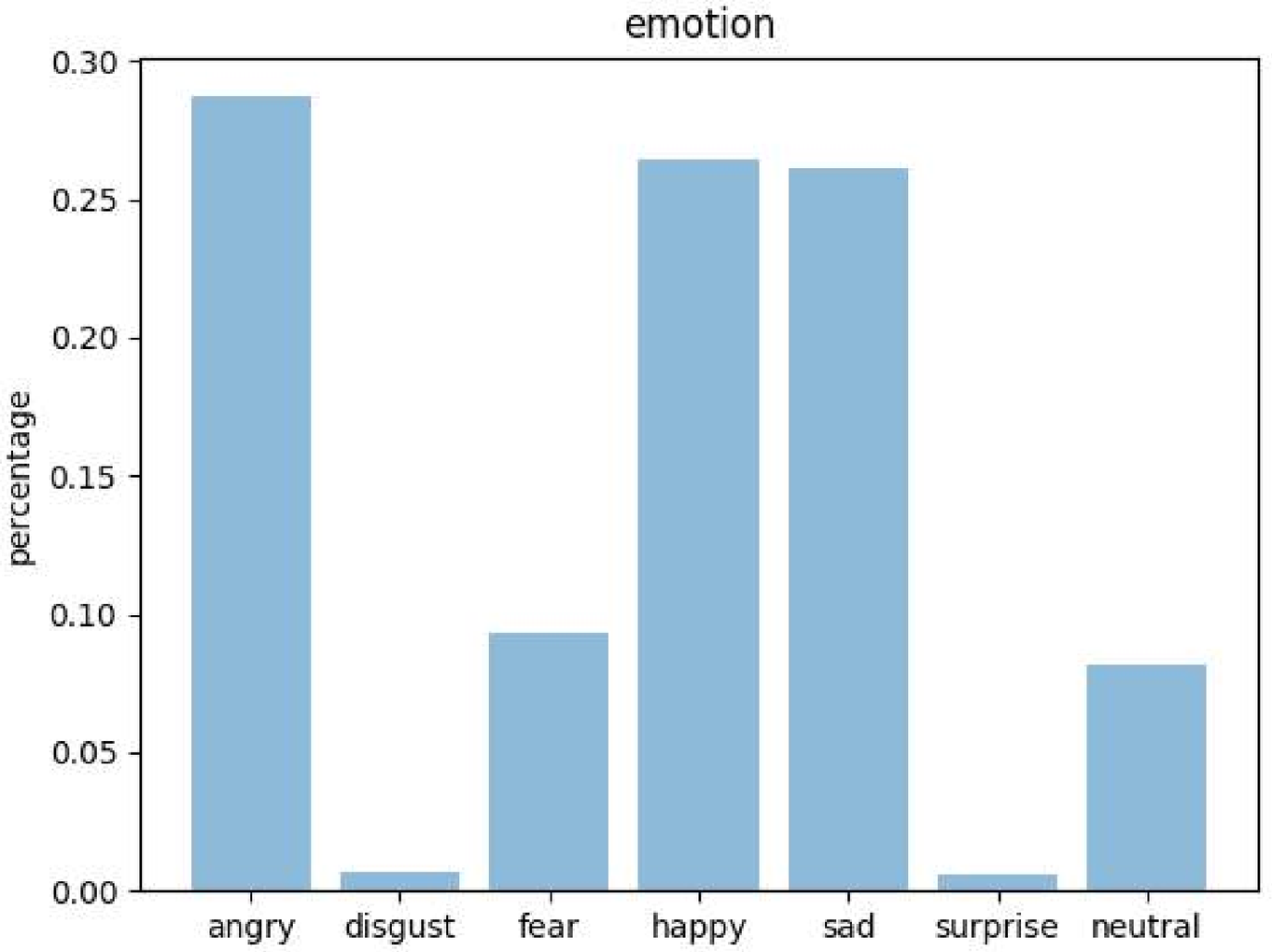
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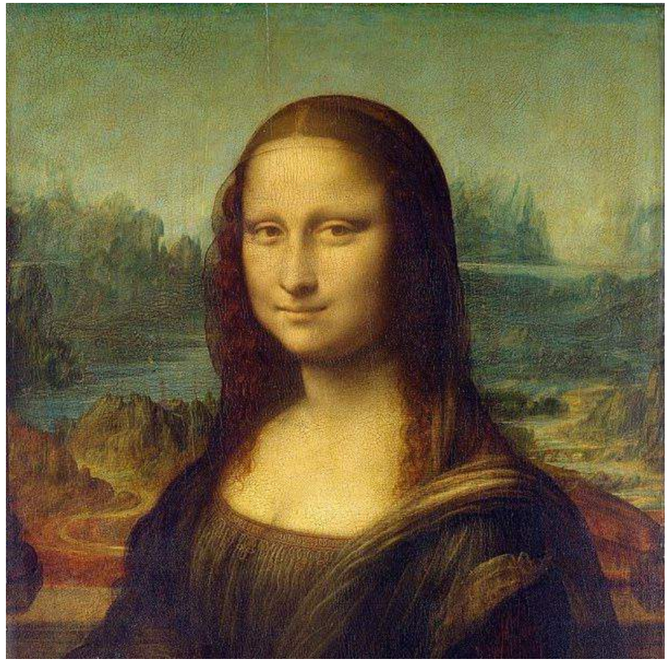

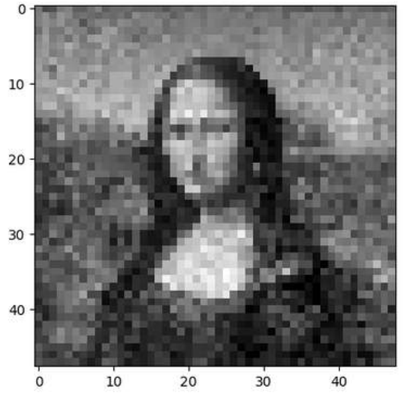
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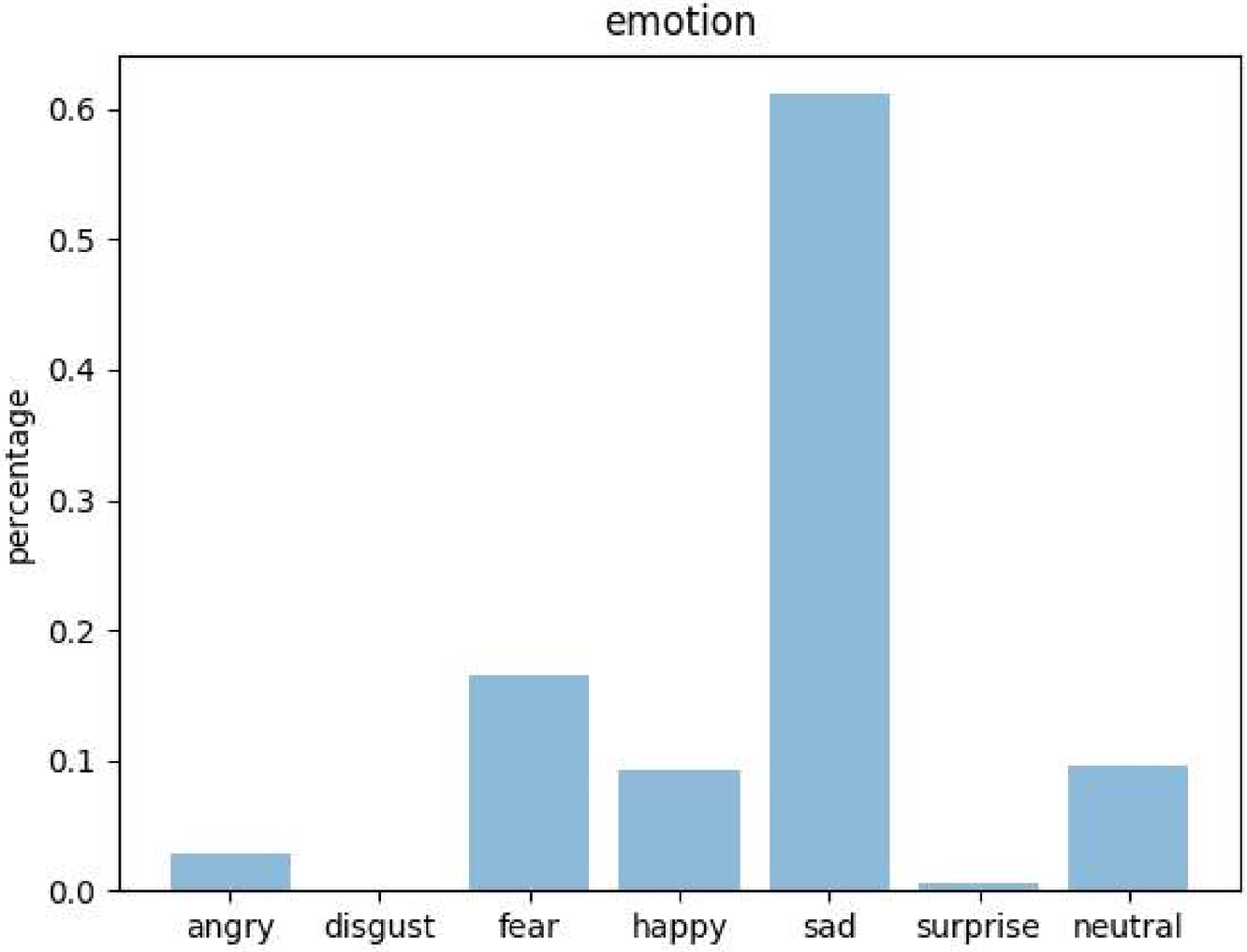
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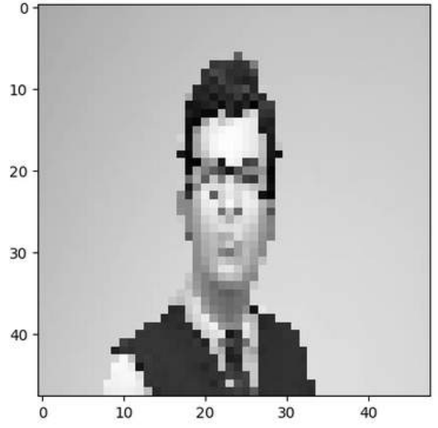
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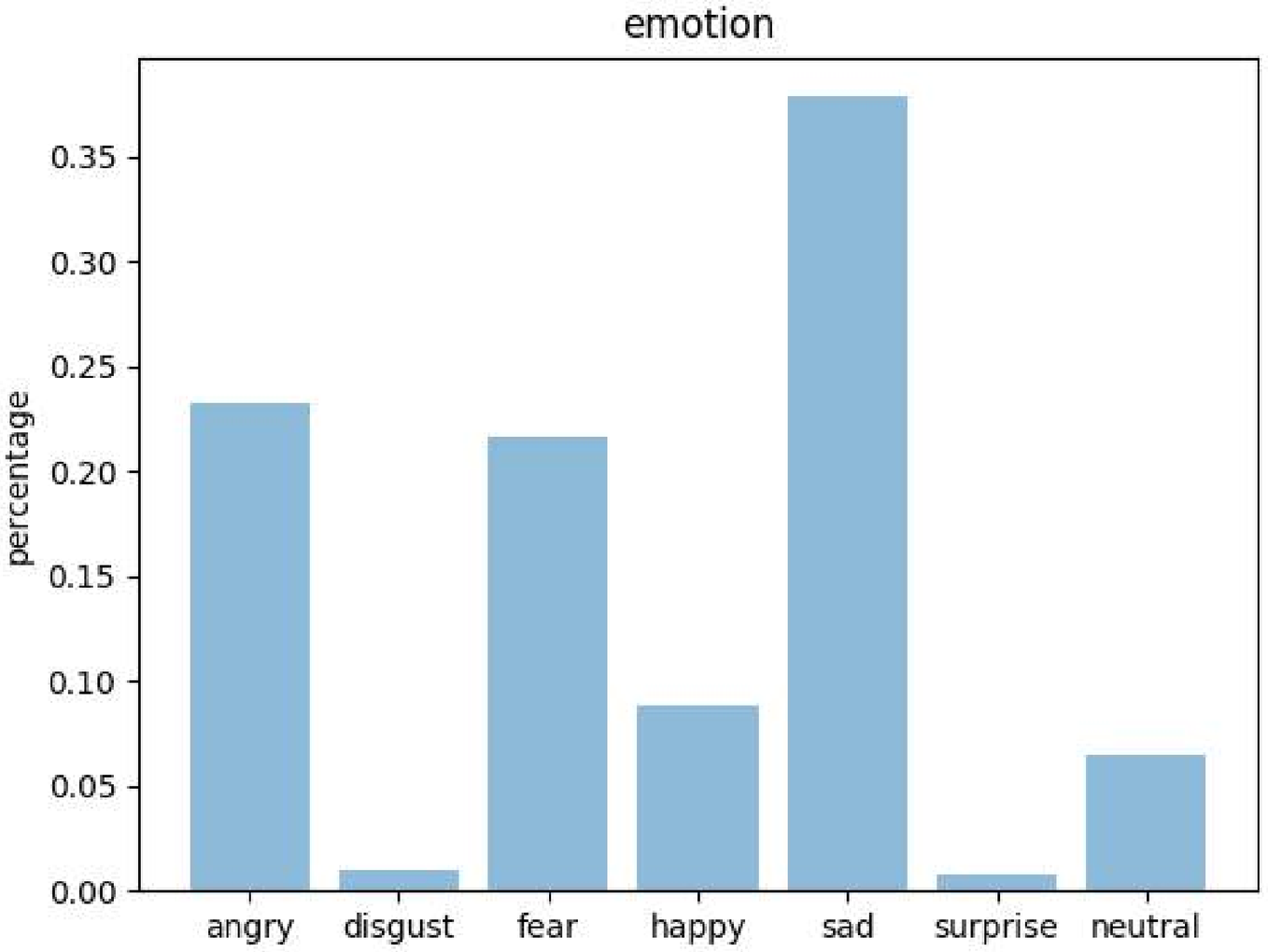
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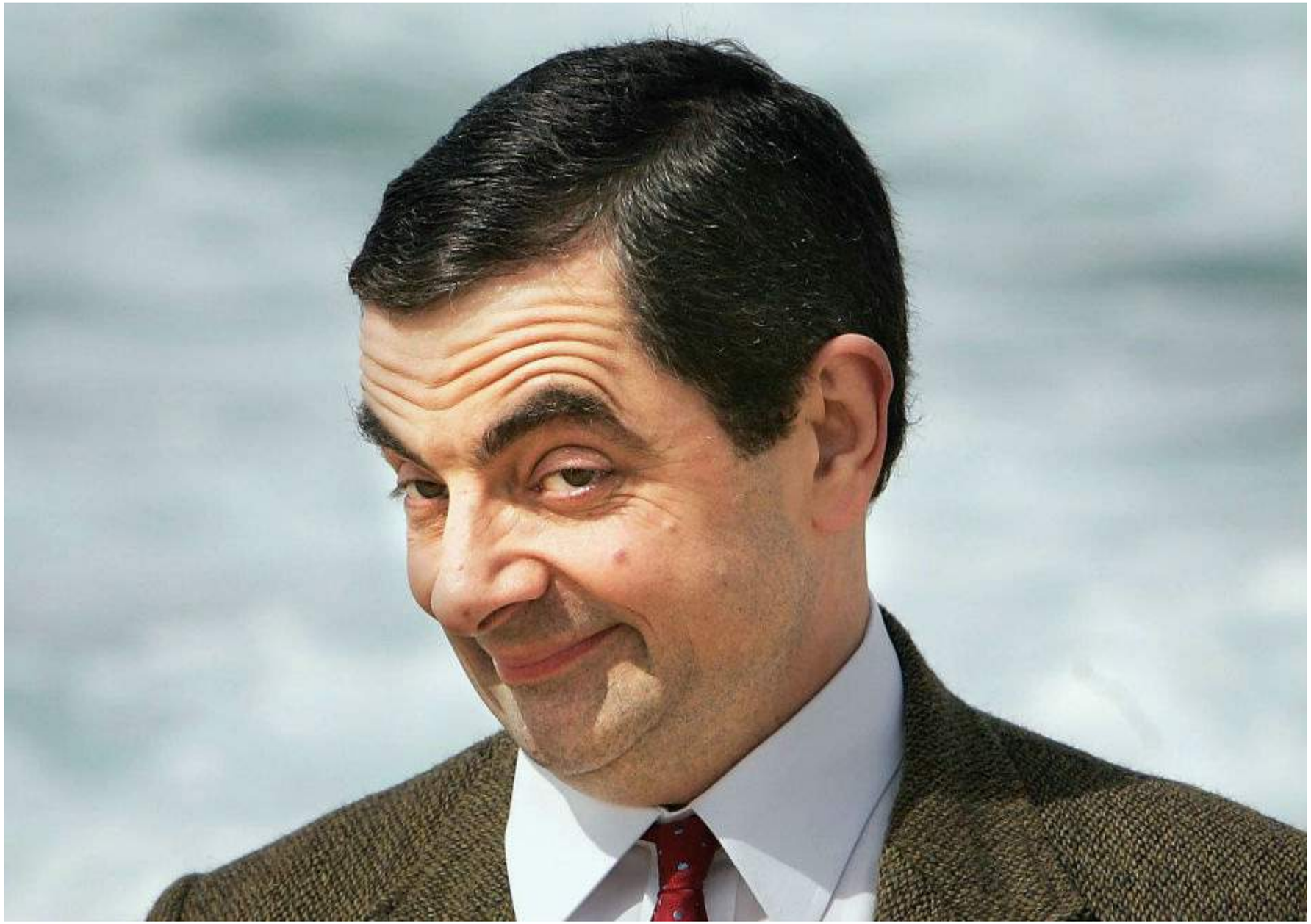

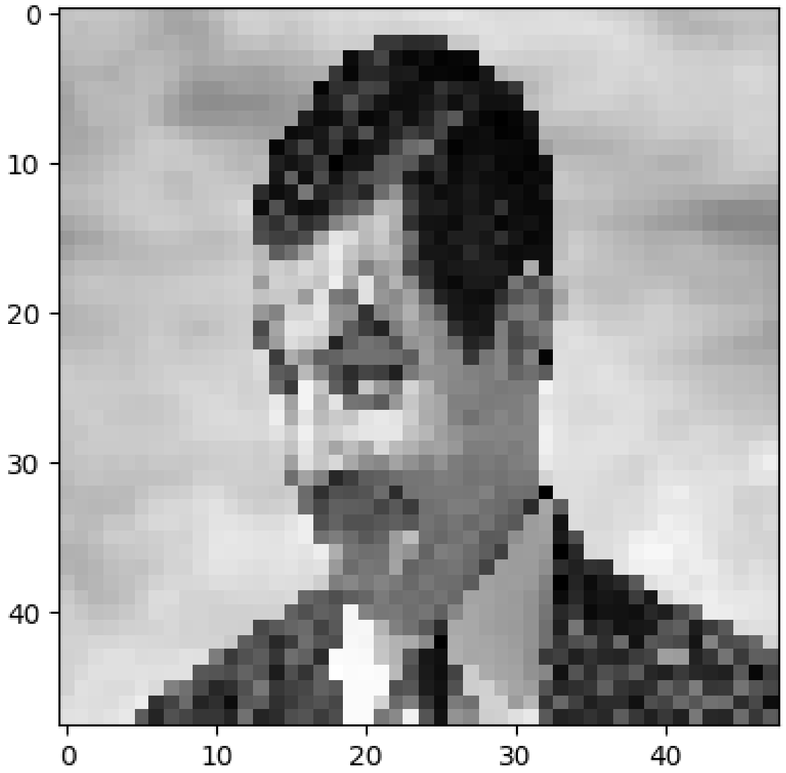
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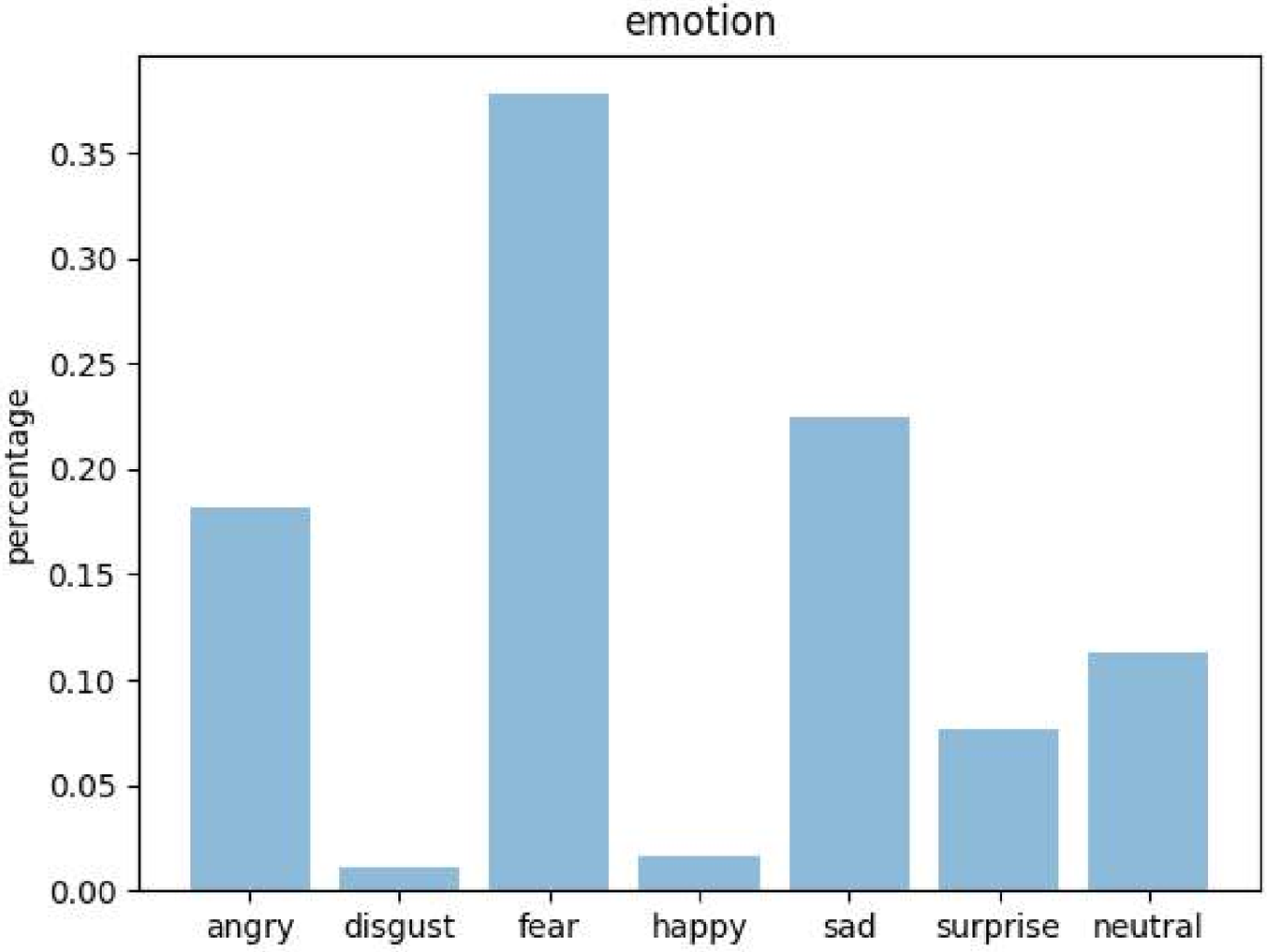
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Evaluation and Conclusion

SOURCES AND LIBRARIES

- Kaggle.com, Fec 2013 Dataset
- Github.com
- Stackoverflow.com
- Canva.com
- Python
- Pycharm
- Tensorflow
- Keras
- Scikit-learn
- Numpy
- Matplotlib
- Open Cv

REFERENCES

- Artificial Intelligence with Python - Prateek Joshi
- Oreilly Fundamental of Deep Learning - Nikhil Buduma
- Artificial Intelligence: A Modern Approach - Stuart Russel, Peter norvig
- AI Super-Powers - Kai Fu Lee
- Stackoverflow.com
- Github.com
- Paulvangent.com
- Sefiks.com
- ntaskmanager.com

GROUP MEMBERS

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