Keele University

Project Title

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April XX 20XX

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Abstract

Abstract goes here.

Acknowledgements

I want to thank...

Contents

1. Introduction

Introduction goes here. To cite like this:

Johnson et al. (2016) showed that...

Use the "\cite{}" command

To cite like this:

A recent paper (Johnson et al., 2016) has shown that...

use the "\citep{} command

For papers with exactly three authors, you must use \citep*{}, like this:

The Deep Learning review article (LeCun, Bengio and Hinton, 2015) summarised...

2. Background

For an example figure, see Figure 2.1:

Figure 2.1: The Keele University logo.

Example equation:

$$\min_G \max_D \mathcal{L}(D, G) = \mathbb{E}_{\boldsymbol{x} \sim p_{data(\boldsymbol{x})}} \log D(\boldsymbol{x}) + \mathbb{E}_{\boldsymbol{z} \sim p_{\boldsymbol{z}(\boldsymbol{z})}} \log(1 - D(G(\boldsymbol{z}))). \tag{2.1}$$

Example pseudocode algorithm:

Algorithm 1: Training process for Algorithm 1...

for *number of training iterations* **do**

    Step 1

    Step 2

    Step 3

end

Step 4

Example source code listing:

Listing 2.1: Python example

```
import numpy as np

def incmatrix(genl1,genl2):
    m = len(genl1)
    n = len(genl2)
    M = None #to become the incidence matrix
    VT = np.zeros((n*m,1), int)  #dummy variable

    #compute the bitwise xor matrix
    M1 = bitxormatrix(genl1)
    M2 = np.triu(bitxormatrix(genl2),1)

    for i in range(m-1):
        for j in range(i+1, m):
            [r,c] = np.where(M2 == M1[i,j])
            for k in range(len(r)):
                VT[(i)*n + r[k]] = 1;
                VT[(i)*n + c[k]] = 1;
                VT[(j)*n + r[k]] = 1;
                VT[(j)*n + c[k]] = 1;

                if M is None:
                    M = np.copy(VT)
                else:
                    M = np.concatenate((M, VT), 1)

                VT = np.zeros((n*m,1), int)

    return M
```

Example of multiple equations:

$$\min_D \mathcal{L}_{LSGAN}(D) = \frac{1}{2}\mathbb{E}_{\boldsymbol{x}\sim p_{data(\boldsymbol{x})}}(D(\boldsymbol{x})-1)^2 + \frac{1}{2}\mathbb{E}_{\boldsymbol{z}\sim p_{\boldsymbol{z}(\boldsymbol{z})}}(D(G(\boldsymbol{z})))^2 \tag{2.2}$$

$$\min_G \mathcal{L}_{LSGAN}(G) = \frac{1}{2}\mathbb{E}_{\boldsymbol{z}\sim p_{\boldsymbol{z}(\boldsymbol{z})}}(D(G(\boldsymbol{z}))-1)^2. \tag{2.3}$$

Example table:

Algorithm	**Per-Pixel Accuracy**	**Per-Class Accuracy**	**Class IoU**
Algorithm 2 (ours)	**0.53**	**0.16**	**0.11**
Algorithm 2 (original)	0.42	0.12	0.08
Baseline algorithm	0.49	0.13	0.10

Table 2.1: Results table for...

2.1 Section 1

Insert text here...

2.1.1 Subsection 1

Insert text here...

2.2 Section 2

Insert text here...

3. Main Body 1

Insert text here...

3.1 Section 1

Insert text here...

3.2 Section 2

Insert text here...

4. Evaluation

Insert text here...

4.1 Testing

Insert text here...

4.2 Experiments and Results

Insert text here...

4.3 Discussion

Insert text here...

5. Conclusion

Insert text here...

Bibliography

Johnson, J., Alahi, A. and Fei-Fei, L. (2016), 'Perceptual Losses for Real-Time Style Transfer and Super-Resolution', *arXiv:1603.08155 [cs]* . arXiv: 1603.08155.

URL: *http://arxiv.org/abs/1603.08155*

LeCun, Y., Bengio, Y. and Hinton, G. (2015), 'Deep learning', *Nature* **521**(7553), 436–444.

URL: *https://www.nature.com/articles/nature14539*

A. Project Plan

B. Ethics Form