STYLE TRANSFER

CNN ABUSE

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WiFi : SG-Guest

Problems with Installation? **ASK!**

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PLAN OF ACTION

TODAY

- Clarification: Projects

- CNN style-transfer

- Super-Resolution

- RNN project work

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PLAN OF ACTION

MONDAY

- RNN project wrap-up

- More Advanced CNNs

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THE PROJECTS

- Set pieces :

  - Dense+features (== addition)

  - CNN+features (eg: image search)

  - RNN categorisation (eg: sentiment)

- 'Personal Projects' :

  - Project 1; potentially leading to...

  - Project 2

- Plan to finish : 15-Nov (last session)

- WSG DEADLINE : 30-Nov (small write-ups)

STYLE-TRANSFER

- Combine :
    - Regular photo (you provide)
    - An artist's style (another photo)
- 'Understand' both using CNN features

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STYLE-TRANSFER IDEA

- Start out with a copy of your photo

- Change it to mimic :

    - Fine features from the original

    - Style features from the artist

    - A good looking result

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STYLE-TRANSFER DETAILS

- Start with image==photo (or random noise)

- Update image to minimise (gradient descent) :

  - Pixel-wise L2 vs photo features

  - Gram-matrix similarity vs style features

  - Self total-variational-loss

- Change parameters according to taste

DEMO TIME
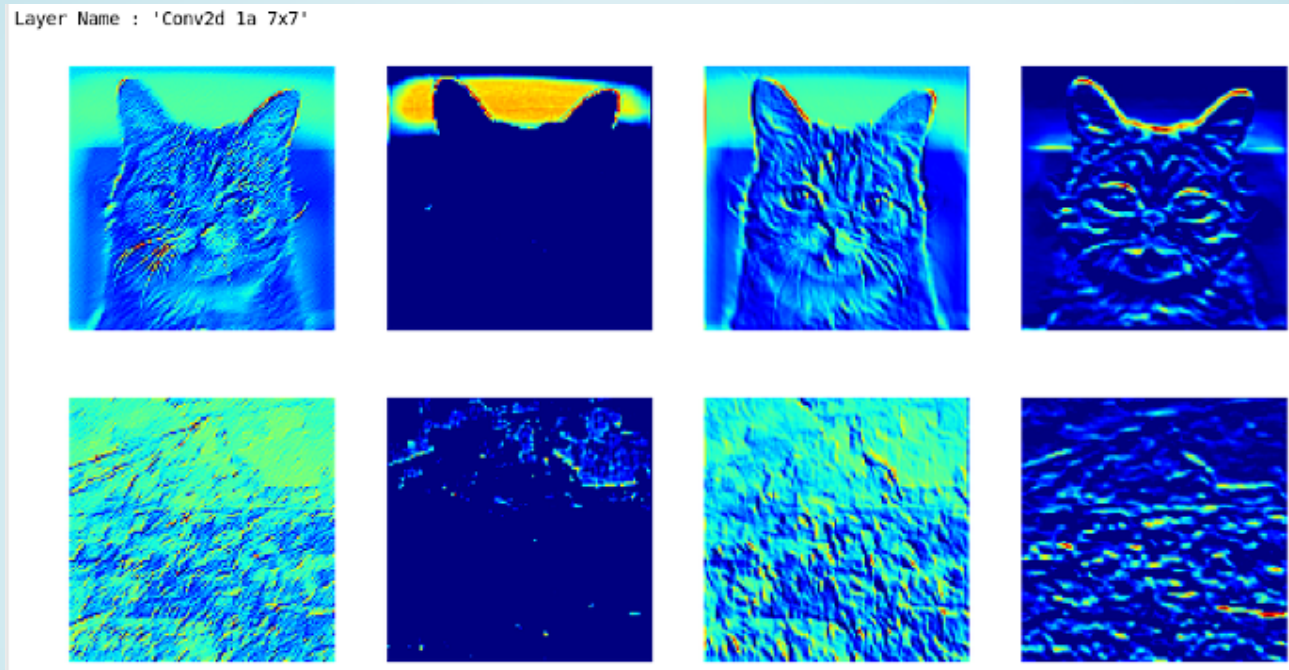
github.com/mdda/deep-learning-workshop/
notebooks/2-CNN/6-StyleTransfer/
4-Art-Style-Transfer-inception_tf.ipynb
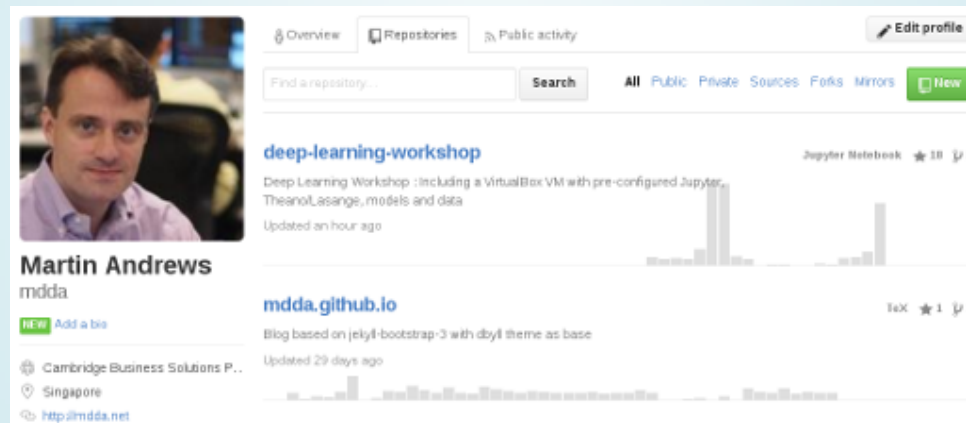
SOME EXAMPLES

(Apologies to the artists)

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Starry Canal (~ van Gogh)

Mediterranean Canal (~ Picasso)

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Cat Cézanne

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WRAP-UP

- CNNs have rich features

- Can be abused in interesting ways

- Having a GPU is VERY helpful

Please add a star...

- QUESTIONS -

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