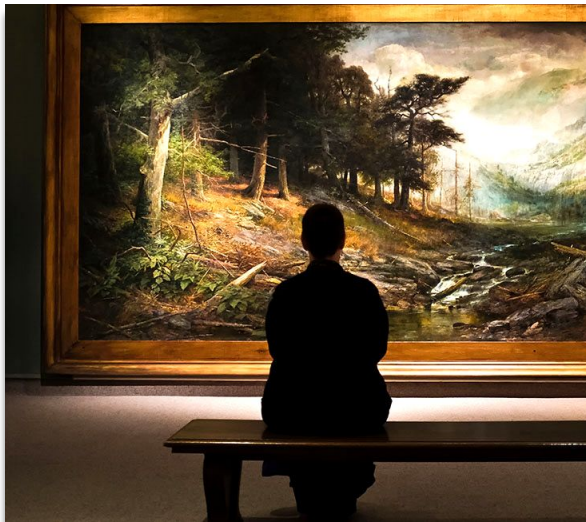# Image Captioning With Art

By Sam Ouimet

ITEM INFORMATION   ABOUT THE DESIGNER   SHIPPING & RETURNS

Online Inquiries: NMS20_H9UDP | Store Inquiries:#401015081326

- An original oil painting in shades of blue.
- Presented in a gold and black pine frame.
- 71"W x 2"D x 49"T.
- Because each work of art is painted by hand, each will vary slightly.
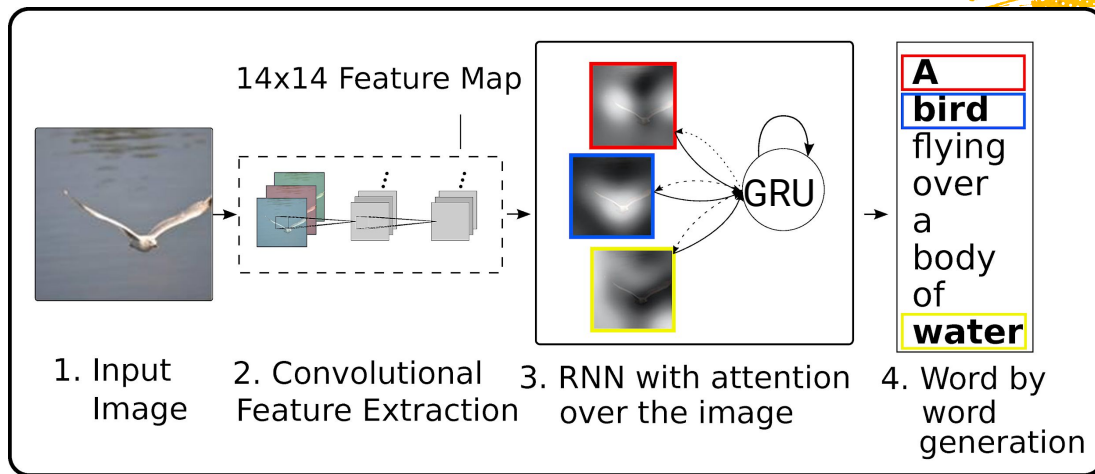- Imported.
- Boxed weight, approximately 48 lbs.

The Data

× Collected 12,500+ images and captions from Reddit.com
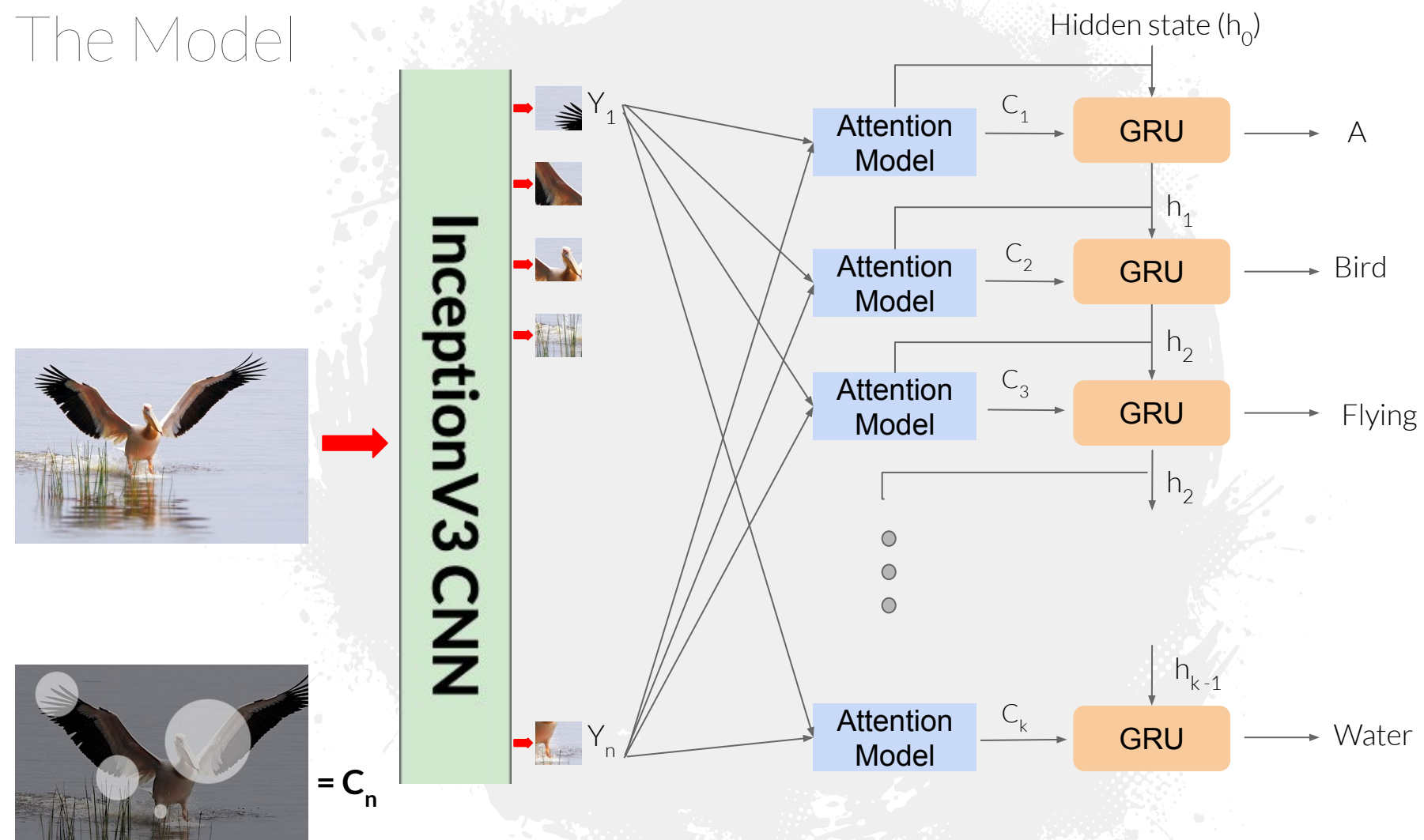× A mix of art, scenery, and people based subreddits

The Model

1. Pre-trained convolutional neural network for image feature extraction and encoding (inceptionv3)
2. Recurrent neural network (GRU) with a visual attention mechanism used for decoding and text sequencing
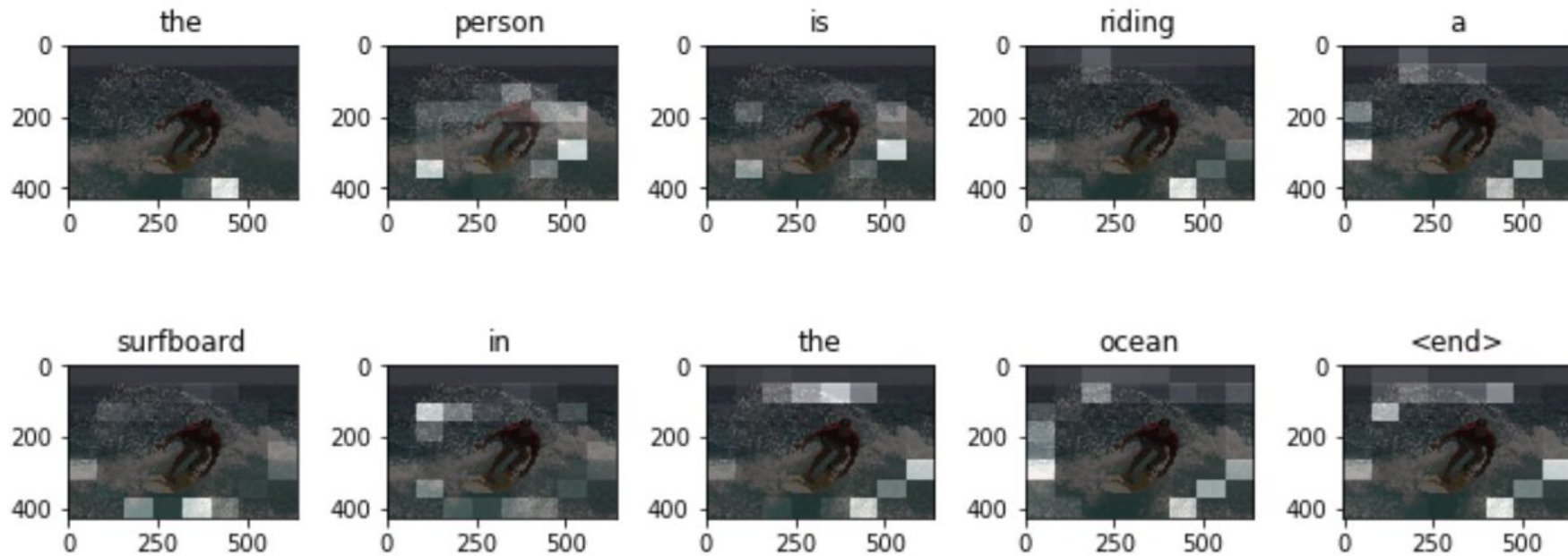

14x14 Feature Map

A
bird
flying
over
a
body
of
water

1. Input Image
2. Convolutional Feature Extraction
3. RNN with attention over the image
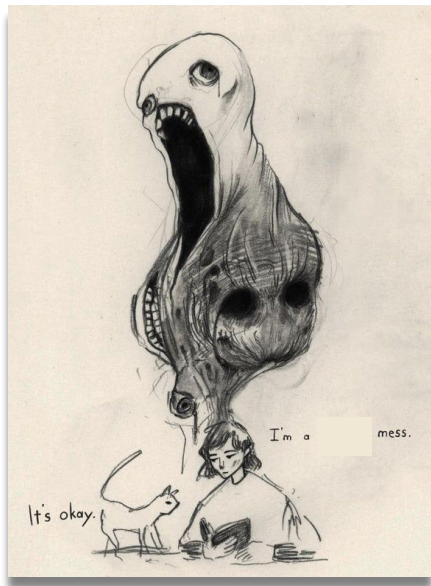4. Word by word generation

GRU

The Model

Visual Attention

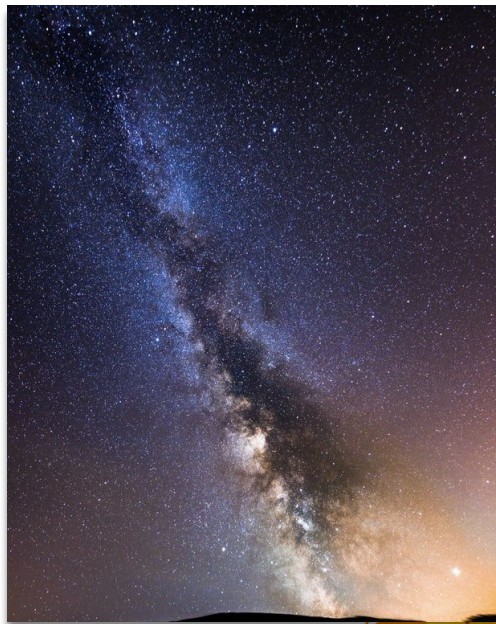Prediction Caption: the person is riding a surfboard in the ocean <end>

Training Results

Real Caption: **"When you want to scream but you can't"**

Predicted Caption: **"Art drawing a picture for a skeleton with god"**

Real Caption: **"Milky way over black forest Germany"**

Predicted Caption: **"The andromeda galaxy"**
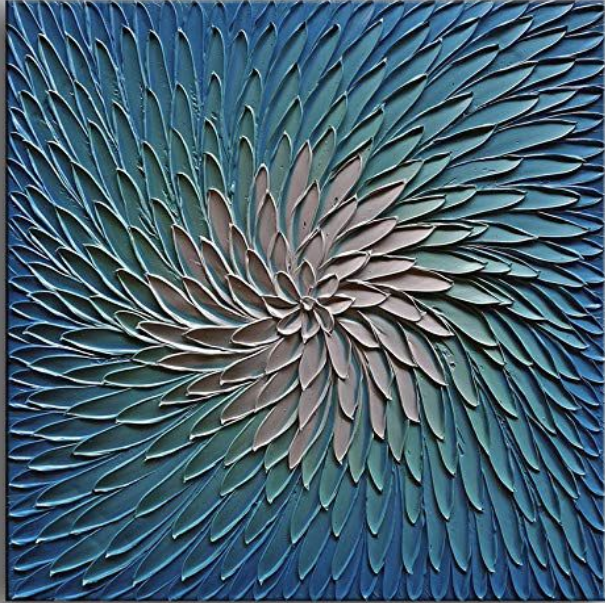
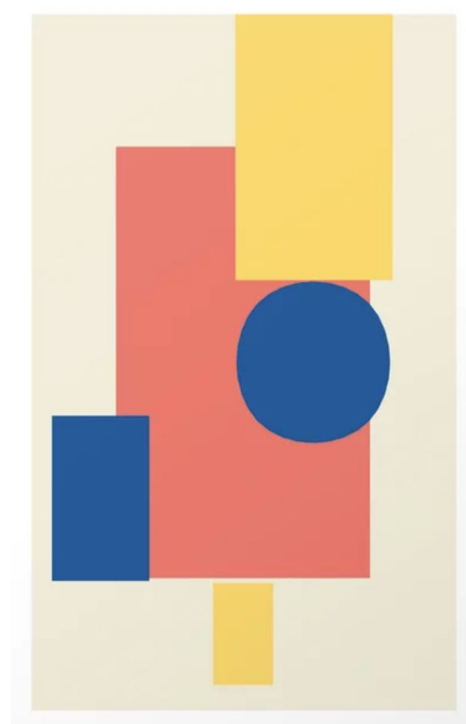# Test Results

"Long exposure shot"

"Still life and pastel drawing"

Abstract Test Results

"Isometric morning"

"Motivational poster for blocks"

Final thoughts

Expedite tedious tasks

Automatically generate image descriptions instead of manually

Aid to the visually impaired

Provide textual clarity for those who struggle seeing long distances

"Artificial Inspiration"

Source of abstract thought or interpretation

"Thoughts at night acrylic painting"

"Fall colors"

Thank You!

By Sam Ouimet
samouimet@gmail.com

Appendix

Resources

- × https://arxiv.org/pdf/1502.03044.pdf

- × https://www.tensorflow.org/tutorials/text/image_captioning

- × https://www.youtube.com/watch?v=W2rWgXJBZhU&t=305s

- × https://towardsdatascience.com/illustrated-guide-to-recurrent-neural-networks-79e5eb8049c9

- × https://www.reddit.com/