Project Number: S19-01
Project Title: Utilizing Semantic Similarity for Image Search
Project term: Spring 2019

Keywords:
- Natural Language Processing
- Image Captioning
- Visual Communication
- Big Data Analytics
- Data Mining

Team Members:
1. Aziz, Seerat (seerat.aziz@rutgers.edu)
2. Aguinaldo, Kristene (kristene.aguinaldo@gmail.com)
3. Wu, Kristian (kw434@scarletmail.rutgers.edu)

Project Advisor:
1. Professor Jorge Ortiz
Capstone Project Proposal

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This project aims to enhance the image search process. Currently, image search consists of people digesting text themselves, manually performing an image search on a search engine (e.g. Google Images), and selecting the appropriate image. Our project improves this process for a user by taking in a document and returning related images of the text by taking advantage of image captioning, specifically by using Google AI’s Conceptual Captions. An image captioning dataset provides an advantage for image search because we can vectorize captions to determine the highest cosine similarity between the given document and all the captions to yield the most relevant image. Previously, Microsoft’s COCO dataset was the standard for image captioning; however, Conceptual Captions is an improved, machine curated dataset that utilizes alt-text of images from across the web to represent a wider variety of image-caption styles.

Imagine a content creator in need of images to supplement their article. This user can input their document into our system and retrieve related images without the hassle of searching. This idea can also be extended to elementary school readers who may need images to increase their comprehension of a book. This project combines natural language processing (NLP) and computer vision for new applications to bridge the gap between textual and visual communication.