**Ge Xia February 10, 2018**

**McKesson Deep Azure Final Project Summary**

**Topic**: Image processing using Microsoft Cognitive Services Computer Vision API

**Problem**: Given an image, use Azure Computer Vision REST API to detect printed text, or recognize handwritten text in the images and extract the recognized characters into a machine-usable character stream.

**Overview:** Microsoft Cognitive Services Computer Vision API can analyze visual content, recognize objects and extract text from images, and much more. In this project, I created a web application using this API to detect and extract printed and handwritten text from images.

**High Level Steps:**

1. Install and configure software tools for code development
2. Obtain Endpoint URL and subscription keys to Azure Cognitive Services
3. Create a web application using JAVA, JSP, Apache Tomcat
4. Implement code to access the REST API call to read text in an image
5. Run the web application in a browser

**Data Set**: Below image URLs are used in the demo.

<https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcSJj9lLB9vU3HoGEGEIc8BWx-Mx_I-cJOTEDFAsL2_YqsMwxtGm>

<http://cdn.newsapi.com.au/image/v1/e10aad3abe8040f34c54ee73add530cf>

<https://d1qhuz9ahqnrhh.cloudfront.net/wp-content/uploads/2014/05/handwritten-banner2.png>

<http://www.productivity501.com/wp-content/uploads/2009/06/picture-9.png>

**Hardware Used:** Windows 10, 64 bit processor laptop.

**Software, Tools and Technologies Used:**

* JDK 8, JSP 2.3
* JAVA, JSON, HTML
* Maven, Eclipse Oxygen IDE
* Apache Tomcat 9
* Azure Microsoft Cognitive Services Computer Vision API

**Lessons learned:**

* The response from the image processing API is in JSON format. To make the feature more usable, the next step I would like to do is to extract the recognized text from JSON string, concatenate all pieces together and display the complete text in the application.
* Depending on the image quality or the style of the text written in the image, inaccurate or partial recognized text sometimes can happen. We can see this in one of the examples I used.

**YouTube Links:**

2 Min: <https://youtu.be/Eizzpb7XzMU>

15 Min: <https://youtu.be/4vOerTrCDmY>