



Assessment Task for – Artificial Intelligence Analyst

Description of the Assessment Task:

- Use Python 3+[preferably] to create (one of the options below):
 - An English word image generators, then feed it to machine learning model [preferably neural network] to recognize the word from the image
 - Use Microsoft Powerpoint to draw a mindmap. Then write a model to understand the flow/layout in XML format
 - Signature verification from the image
 - Group paragraphs in an annual report into title headers
 - Built a chat bot using movie subtitles downloaded from the internet
 - Translation engine based on conversation – can download bilingual movie subtitles
 - Generate a finance dictionary based on annual reports (Bilingual)
 - News Analysis - count the unique news event impact on industry/ region and rank the news impact on stock price or revenue
- [Bonus]
 - Create the simple HTML + Javascript to run the program
 - Deliver an API to call the program
 - Push the program as a Docker Image to Docker Hub
 - Demonstrate the use of Cloud Computing for the solution
- The task is an open-end task, which means that there is no limitation on its scale and scope. To emulate the real work environment, it is possible to reference codes appears in StackOverflow and various tutorials online (as long as it is clearly indicated in the in-line comment).
- Deadline for submission: **11:59pm, November 21, 2018**
- It is welcomed to contact dl.apac_data_lab@asia.bnpparibas.com on points not covered below

After the Assessment Task is done:

- How to submit?
 - Attach the source codes as zip and relevant files (such as sample data), send to dl.apac_data_lab@asia.bnpparibas.com , copy jasper.wong@asia.bnpparibas.com for record keeping of the recruitment process
 - Upload the source code to GitHub and share the links (Github, Docker Hub)
- After Submission:
 - Passing candidate will be called for interview with the hiring manager. Response on submitted assessment task is provided within one week.
 - If passed, present the program during interview, including object and model's architecture, such as choice of library
 - Prepare the appropriate means to present the result, including the metrics and data flow. It means it could be ppt or any other medium that fits



Why this Task?

This is a hygiene test to understand the candidate's technical foundations, which ensures meaningful outcome in the short time-frame. Behavioral questions and attitudes are assessed during the face-to-face interview. The following areas are reviewed:

- Candidate's ability to learn, solve problem independently with creativity
- Technical ability in image processing and text mining, pre-processing and machine learning model(s), which is very relevant to the live projects we are having
- Coding styles

FAQ of the assessment task:

- What are the environment assumptions?
 - Assume no internet connection during program run-time, but it is okay to install the prerequisite libraries
 - Use of public cloud based machine learning API is not allowed
 - OS assumed to be Ubuntu
- Can I use open-source program?
 - Yes and necessary to use open-source software/program even referencing answers from Stackoverflow. Be sure to mention it or add in-line comment to respect intellectual property rights
- How big the scope can be?
 - We scale the program according to the problem, as in real life problem, best to start small, avoid over-doing.
- Can I use other programming languages?
 - Yes. C++ is also a viable choice given its linkage with Tensorflow/PyTorch and OpenCV