# Model #1 (Tensorflow Object Detection API – not added)

## Data

Link 1: <https://github.com/lordloh/playing-cards>

## Links Used

* GitHub Repository: <https://github.com/tensorflow/models>
* Medium Link: <https://akhilck.medium.com/playing-card-detection-using-cnn-d89655356cf8>
* Protoc path setup: <https://www.geeksforgeeks.org/how-to-install-protocol-buffers-on-windows/#:~:text=Open%20the%20command%20prompt%20%26%20you,it%20is%20ready%20to%20use>.

## Setup

1. powershell: $env:PYTHONPATH += "C:\Users\modaj\OneDrive\Documents\Personal\Jobs\SHAI\intern - task 2\Model\_1"
   1. SET PYTHONPATH="C:\Users\modaj\OneDrive\Documents\Personal\Jobs\SHAI\intern - task 2\Model\_1"
   2. **GUI**: PYTHONPATH=/home/nidhin/Ck/card\_detection/models:/home/nidhin/Ck/card\_detection/models/research:/home/nidhin/Ck/card\_detection/models/research/slim
2. Linux: wget https://github.com/tensorflow/models
3. command line (new venv): pip install opencv-python-headless
4. remove opencv-python-headless==4.5.2.52 from Model\_1/official/requirements.txt
5. command line (new venv): pip install -r Model\_1/official/requirements.txt
6. command line (new venv): pip install tensorflow-text-nightly
7. powershell: $env:PYTHONPATH += "C:\Users\modaj\OneDrive\Documents\Personal\Jobs\SHAI\intern - task 2\Model\_1\research"
   1. SET PYTHONPATH="C:\Users\modaj\OneDrive\Documents\Personal\Jobs\SHAI\intern - task 2\Model\_1"
8. powershell: $env:PYTHONPATH += "C:\Users\modaj\OneDrive\Documents\Personal\Jobs\SHAI\intern - task 2\Model\_1 \research\slim"
   1. SET PYTHONPATH="C:\Users\modaj\OneDrive\Documents\Personal\Jobs\SHAI\intern - task 2\Model\_1\research\slim"
9. Linux: wget -O protobuf.zip <https://github.com/google/protobuf/releases/download/v3.0.0/protoc-3.0.0-linux-x86_64.zip>

SET PYTHONPATH="C:\Users\modaj\OneDrive\Documents\Personal\Jobs\SHAI\intern - task 2\Model\_1; C:\Users\modaj\OneDrive\Documents\Personal\Jobs\SHAI\intern - task 2\Model\_1\research\slim; C:\Users\modaj\OneDrive\Documents\Personal\Jobs\SHAI\intern - task 2\Model\_1\research"

Protoc program: C:\Program Files\protoc (+ PATH VARIALBE SETUP)

# Model #4 (yolov5 framework)

## Links Used

* <https://docs.nvidia.com/cuda/cuda-installation-guide-microsoft-windows/index.html>
  + CUDA solutions:
  + https://medium.com/analytics-vidhya/cuda-toolkit-on-windows-10-20244437e036
  + https://developer.nvidia.com/rdp/cudnn-download
* <https://github.com/EdjeElectronics/OpenCV-Playing-Card-Detector>
* <https://www.kaggle.com/code/andy8744/beginner-train-a-yolov5-model/data>s
* Problem solution 1: <https://stackoverflow.com/questions/68562730/how-to-fix-assertionerror-cuda-unavailable-invalid-device-0-requested>
* Pytorch correct version: <https://pytorch.org/>

## Training Scripts Used

* Train: py train.py --batch 16 --epochs 120 --data ../data.yaml --weights yolov5s.pt --device 0 --workers 2
* Detect: py detect.py --weights runs/train/exp12/weights/best.pt --source 0
  + py detect.py --weights runs/train/exp12/weights/best.pt --source 0 --conf 0.6 --iou 0.45
  + py detect.py --weights ../yolov5/runs/train/exp47/weights/best.pt --source 0
  + py detect\_3.py --weights ../yolov5/runs/train/exp47/weights/best.pt --source 0
  + py detect\_4.py --weights ../yolov5/runs/train/exp47/weights/best.pt --source 1

## Image annotation tool used

* Roboflow
* Python Coding
* Makesense.ai