

Redirected Walking

230608 19101188 고은수

Todo

```
pythonProject > rdw.py
import eventlet
import socketio

sio = socketio.Server()
app = socketio.WSGIApp(sio)

@sio.event
def connect(sid, environ):
    print('connect ', sid)

@sio.on('Location', namespace='/')
def location(sid, data):
    print('Location ', data)
    x, y, z = data.split(',')
    x = float(x.split('=')[1]) + 100
    y = float(y.split('=')[1]) + 100
    z = float(z.split('=')[1]) + 100
    new_data = f'{x}-{y} {z}-{z}'
    sio.emit('Location', new_data, room=sid)

@sio.event
def disconnect(sid):
    print('disconnect ', sid)

if __name__ == '__main__':
    eventlet.wsgi.server(eventlet.listen(''), app)
```

```
rdw
Location : X=1365.434 Y=1281.452 Z=98.337
disconnect ZNUVYKJGzXlnzUAAAP
127.0.0.1 - - [11/May/2023 13:38:44] "GET /socket.io/?EIO=4&transport=websocket&t=1083779916 HTTP/1.1" 200 0 8.234787
(1336) accepted ('127.0.0.1', 53706)
connect 8mib0_1mzbbeBmAAR
Location : X=1000.000 Y=1810.000 Z=98.337
Location : X=1116.948 Y=1728.479 Z=98.337
Location : X=1420.070 Y=1277.331 Z=98.337
Location : X=1102.644 Y=1378.824 Z=98.337
Location : X=1273.569 Y=1306.082 Z=98.337
Location : X=1273.569 Y=1306.082 Z=98.337
Location : X=1272.634 Y=1305.281 Z=98.337
Location : X=1433.831 Y=1447.107 Z=98.337
Location : X=1188.800 Y=1250.441 Z=98.337
Location : X=1223.551 Y=1263.488 Z=98.337
Location : X=983.338 Y=831.537 Z=98.337
Location : X=867.333 Y=604.800 Z=98.337
```

Socket Server
socket.io, wsgi를 이용한 웹서버

NirAharon / BoT-SORT (Public)

Code Issues 30 Pull requests 3 Discussions Actions Projects Security Insights

main 1 branch 0 tags Go to file Code

NirAharon Restore track.py 2519854 on Oct 31, 2022 26 commits

VideoCameraCorrection/VideoCamer... Merge the last VideoCameraCorrection project 8 months ago

assets Add results image last year

fast_reid Support YOLOv7 + minor fixes last year

tools Restore track.py 8 months ago

tracker Add CMC based Sparse Optical Flow as in OpenCV Vidstab GMC. 8 months ago

yolov7 Support YOLOv7 + minor fixes last year

yolox add yolox train script 10 months ago

.gitignore minor fixes last year

LICENSE Upload code last year

README.md Add CMC based Sparse Optical Flow as in OpenCV Vidstab GMC. 8 months ago

requirements.txt Upload code last year

setup.cfg Upload code last year

setup.py Upload code last year

README.md

BoT-SORT

BoT-SORT: Robust Associations Multi-Pedestrian Tracking

Nir Aharon, Roy Orfaig, Ben-Zion Bobrovsky

Ranked #2 Multi-Object Tracking on MOT17 (using additional training data)

Ranked #2 Multi-Object Tracking on MOT20 (using additional training data)

<https://arxiv.org/abs/2206.14651>

MOT17 MOT20

Jupyter Notebook 69.9% Python 27.5%
C++ 2.2% Cython 0.2%
CMake 0.1% Dockerfile 0.1%

BoT-SORT
좌표를 얻는 스크립트

초기설정

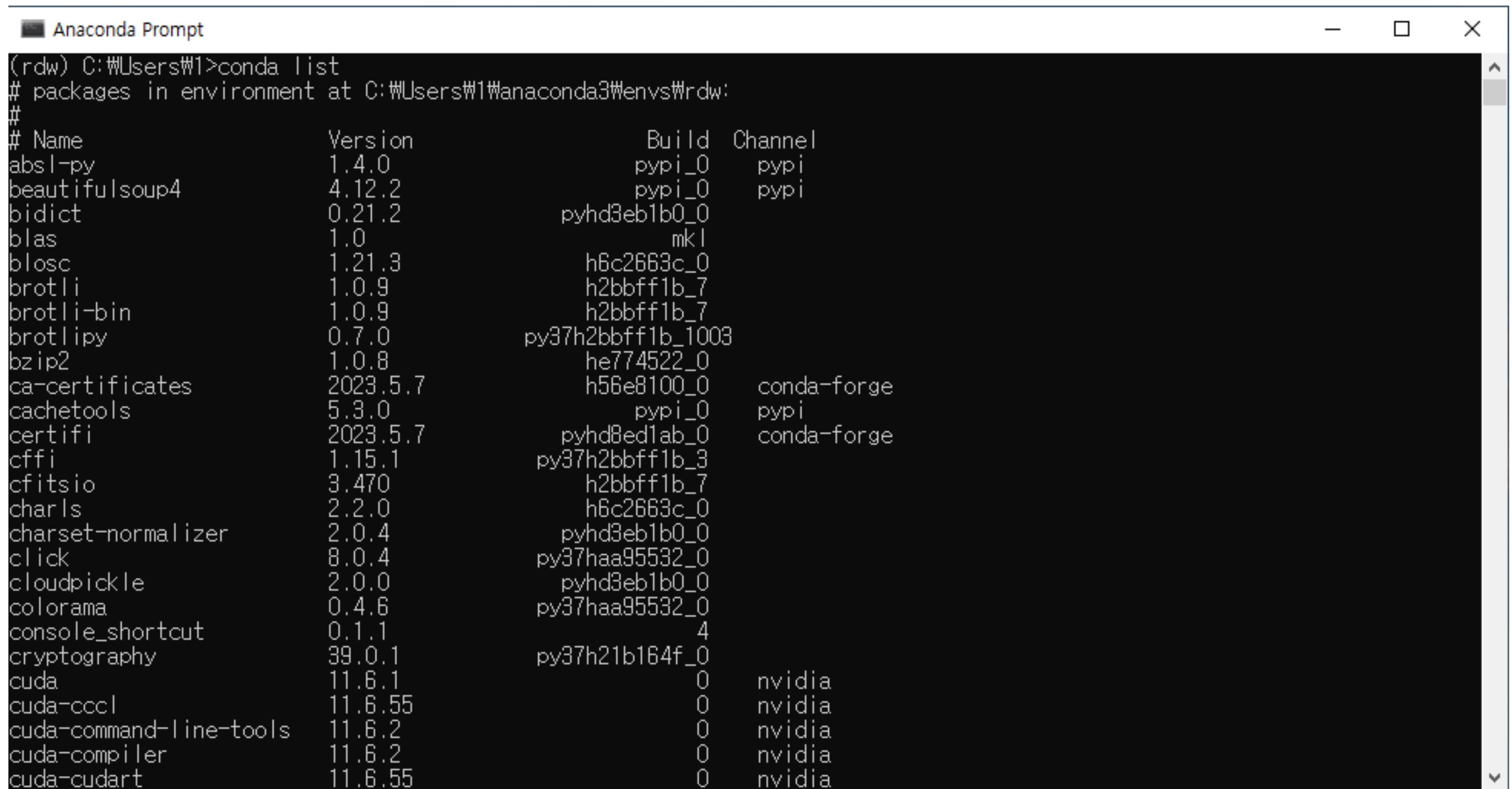
CUDA(11.6) & CUDNN(8.9.2) 설치 및 설정

The screenshot shows the CUDA Toolkit 11.6 Downloads page on the NVIDIA Developer website. The 'Select Target Platform' section is displayed, with 'Windows' selected under 'Operating System', 'x86_64' selected under 'Architecture', '11' selected under 'Version', and 'exe (local)' selected under 'Installer Type'. Below this, a large button labeled 'Download Installer for Windows 10 x86_64' is visible, with a 'Download (2.4 GB)' link next to it.

The screenshot shows the cuDNN Download page on the NVIDIA Developer website. It features a section titled 'cuDNN Download' with a note about NVIDIA cuDNN being a GPU-accelerated library for deep neural networks. A checkbox for 'I Agree To the Terms of the cuDNN Software License Agreement' is checked. Below this, there are two download links: 'Download cuDNN v8.9.2 (June 1st, 2023), for CUDA 12.x' and 'Download cuDNN v8.9.2 (June 1st, 2023), for CUDA 11.x'. A 'Archived cuDNN Releases' section is also present. At the bottom, the NVIDIA Developer footer includes links for HIGH PERFORMANCE COMPUTING, JETPACK, DRIVE, Copyright information, Legal Information, Terms of Use, Privacy Policy, Cookie Policy, and Contact.

초기설정

가상환경 설정



The screenshot shows the Anaconda Prompt window with the title "Anaconda Prompt". The command `conda list` is run in the directory `C:\Users\rdw\anaconda3\envs\rdw`. The output lists numerous Python packages and their details:

Name	Version	Build	Channel
absl-py	1.4.0	pypi_0	pypi
beautifulsoup4	4.12.2	pypi_0	pypi
bidict	0.21.2	pyhd3eb1b0_0	
blas	1.0	mk_1	
blosc	1.21.3	h6c2663c_0	
brotli	1.0.9	h2bbff1b_7	
brotli-bin	1.0.9	h2bbff1b_7	
brotli-py	0.7.0	py37h2bbff1b_1003	
bzip2	1.0.8	he774522_0	
ca-certificates	2023.5.7	h56e8100_0	conda-forge
cachetools	5.3.0	pypi_0	pypi
certifi	2023.5.7	pyhd8ed1ab_0	conda-forge
cffi	1.15.1	py37h2bbff1b_3	
cfitsio	3.470	h2bbff1b_7	
charls	2.2.0	h6c2663c_0	
charset-normalizer	2.0.4	pyhd3eb1b0_0	
click	8.0.4	py37haa95532_0	
cloudpickle	2.0.0	pyhd3eb1b0_0	
colorama	0.4.6	py37haa95532_0	
console_shortcut	0.1.1	4	
cryptography	39.0.1	py37h21b164f_0	
cuda	11.6.1	0	nvidia
cuda-cccl	11.6.55	0	nvidia
cuda-command-line-tools	11.6.2	0	nvidia
cuda-compiler	11.6.2	0	nvidia
cuda-cudart	11.6.55	0	nvidia

코드 Merge

The screenshot shows a code editor with a dark theme. On the left is a file explorer with the following directory structure:

- BoT-SORT-main
- assets
- fast_reid
- pretrained
- tools
 - datasets
 - YOLOX_outputs
 - demo.py
 - export_onnx.py
 - interpolation.py
 - mc_demo.py
 - mc_demo_yolov7.py
 - mota.py
 - test1.txt
 - track.py
 - track_yolov7.py
- tracker
- VideoCameraCorrection
- yolov7
- yolox
 - core
 - data
 - evaluators
 - exp
 - exps
 - layers
 - models
 - utils
 - _init_.py
 - allreduce_norm.py
 - boxes.py
 - checkpoint.py
 - demo_utils.py
 - dist.py
 - ema.py
 - h_1217.npy
 - logger.py
 - lr_scheduler.py
 - metric.py
 - model_utils.py
 - setup_env.py
 - visualize.py
- __init__.py
- train.py
- .gitignore
- LICENSE
- README.md
- requirements.txt
- setup.cfg
- setup.py
- t.py
- 외부 라이브러리
- 스크래치 및 콘솔

실행결과

```
실행 demo
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
Processing frame 300 (6.95 fps)
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
Processing frame 320 (7.10 fps)
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
Processing frame 340 (7.25 fps)
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
Processing frame 360 (7.36 fps)
INFO:__main__:Location :X=2307.764 Y=788.036 Z=298.275
T-SORT-main > tools > demo.py
```

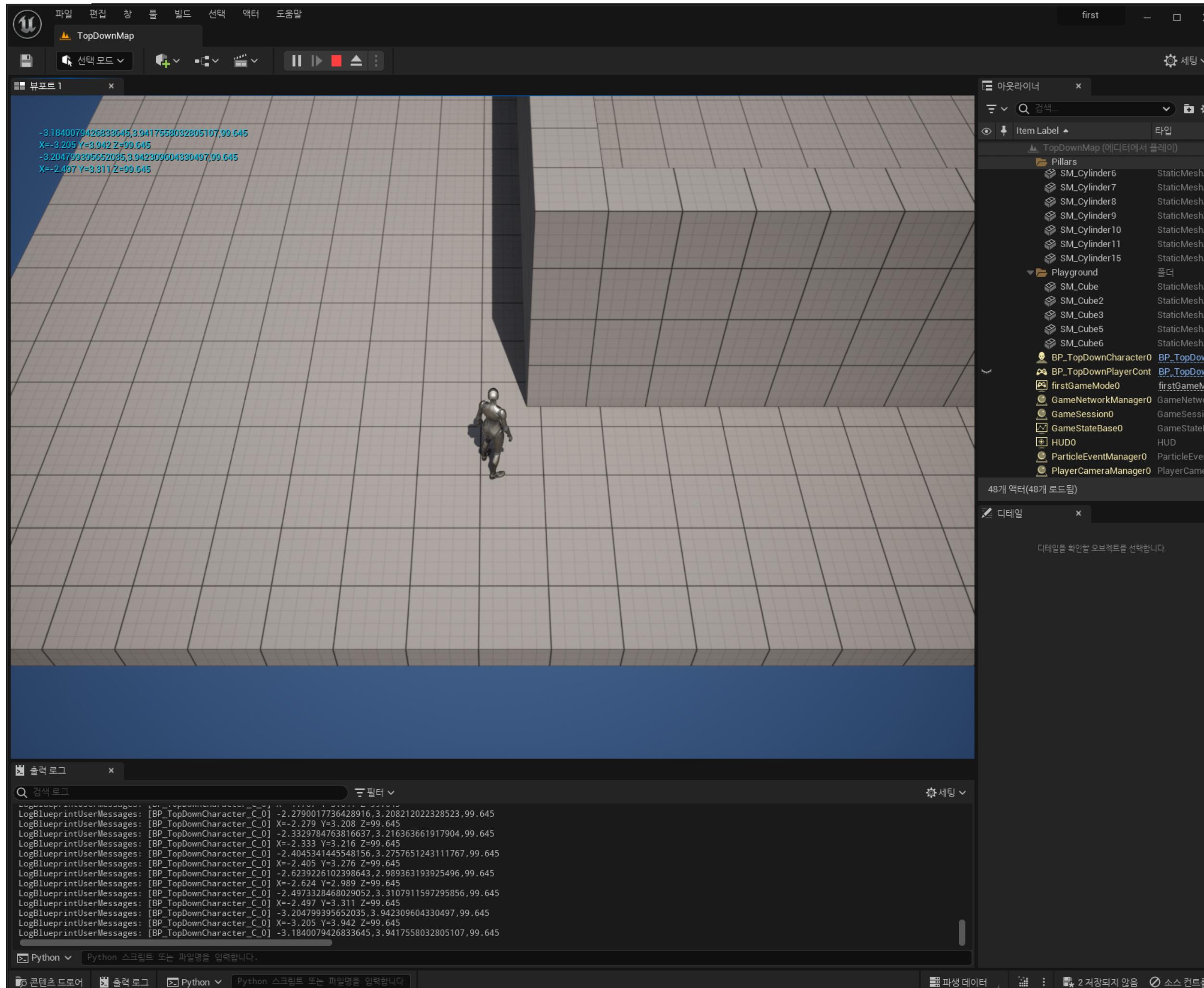
```
*제목 없음 - Windows 메모장
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)

LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1100.0, y = 1910.0, z = 198.337, videoX=-1.269540644212416 videoY=3.8913199801704574
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1000.000 Y=1810.000 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1100.0, y = 1910.0, z = 198.337, videoX=-1.2040360828362504 videoY=3.785031293099334
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1020.617 Y=1569.857 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1120.617, y = 1669.857, z = 198.337, videoX=-1.4981905900476191 videoY=3.549524522636336
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1427.354 Y=1224.520 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1527.354, y = 1324.52, z = 198.337, videoX=-1.5106037779800598 videoY=3.599486719747583
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1722.922 Y=1394.201 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1822.922, y = 1494.201, z = 198.337, videoX=-1.5736812588611517 videoY=3.825452767762884
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1254.788 Y=1479.098 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1354.788, y = 1579.098, z = 198.337, videoX=-1.5085815378021867 videoY=3.7970651015488412
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1152.256 Y=1031.511 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1252.256, y = 1131.511, z = 198.337, videoX=-1.2974493302342565 videoY=3.45307119710618
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-1.1704203821081014 videoY=3.309785098550165
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-1.1849800378268331 videoY=3.4131986501568443
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-0.7970027986566794 videoY=2.8602853123509875
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-1.5482498329846175 videoY=2.724948354797142
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-1.0530142867005705 videoY=2.1589502057790155
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-0.7970027986566794 videoY=2.8602853123509875
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-2.61088777175517 videoY=4.600048728261601
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-2.479232377443843 videoY=4.4242108077177225
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-2.4221903442122157 videoY=4.327306301912509
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-2.4221903442122157 videoY=4.327306301912509
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-1.563302898781668 videoY=3.613816128169851
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-2.8044020019214124 videoY=3.9579710552401397
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-1.4365253604807025 videoY=3.769456014917755
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-2.2037224901040053 videoY=3.2035812447481486
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-1.528734681933053 videoY=3.0192507545983807
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-1.2164121672074155 videoY=3.695380215038978
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] X=1177.885 Y=933.668 Z=98.337
LogBlueprintUserMessages: [BP_TopDownCharacter_C_0] x = 1277.885, y = 1033.6680000000001, z = 198.337, videoX=-1.9562978178211516 videoY=2.369102487131595|
```

UE5 to Python

Python to UE5

캐릭터의 좌표 조정



서버에서 보내준 좌표를 이용해서
캐릭터의 좌표를 조정했습니다.

정리) Server와 Client 역할

Client(UE5)

1. 사용자들의 위치에 따라서 가상환경에서의 좌표 조정
2. Server로 부터 받은 Key(rdw)를 이용해서 화면 조정

Server(Python)

1. Client가 사용자들의 현재 위치를 요청하면 넘겨주기
2. 사용자의 예측 방향, 현재 위치를 기준으로 Key넘겨주기

TODO

1. 서버에서 key를 넘겼을 때 화면(카메라) 조정이 가능한지 확인할 수 있는
1인칭 프로젝트 생성
2. BoT-SORT 카메라 연동 테스트
3. 서버에서 위치 뿐만이 아니라 방향도 전송할 수 있도록
4. RDW 로직 구상

감사합니다