

# PLASS-NIA 인공지능학습데이터구축사업 (2021)

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5팀(김도현, 전은성)

# 목차

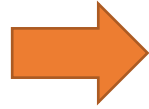
- 1. 학습데이터
- 2. 모델 학습
  - 1. 모델 테스트
  - 1. 향후 계획



# 1. 학습데이터

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Assault.avi



- Assault 동영상에서 추출한 이미지
- 이미지를 이용해 학습을 하여 평가

# 1. 학습데이터

```
UCF-Crime_Assault/Assault001_x264 0
UCF-Crime_Assault/Assault002_x264 0
UCF-Crime_Assault/Assault003_x264 0
UCF-Crime_Assault/Assault004_x264 0
UCF-Crime_Assault/Assault005_x264 0
UCF-Crime_Assault/Assault006_x264 0
UCF-Crime_Assault/Assault007_x264 0
UCF-Crime_Assault/Assault009_x264 0
UCF-Crime_Assault/Assault010_x264 0
UCF-Crime_Assault/Assault011_x264 0
UCF-Crime_Assault/Assault012_x264 0
UCF-Crime_Assault/Assault013_x264 0
UCF-Crime_Assault/Assault014_x264 0
UCF-Crime_Assault/Assault017_x264 0
UCF-Crime_Assault/Assault018_x264 0
.....
```

trainlist.txt

UCF-Crime\_Ind.txt - Windows 메모장

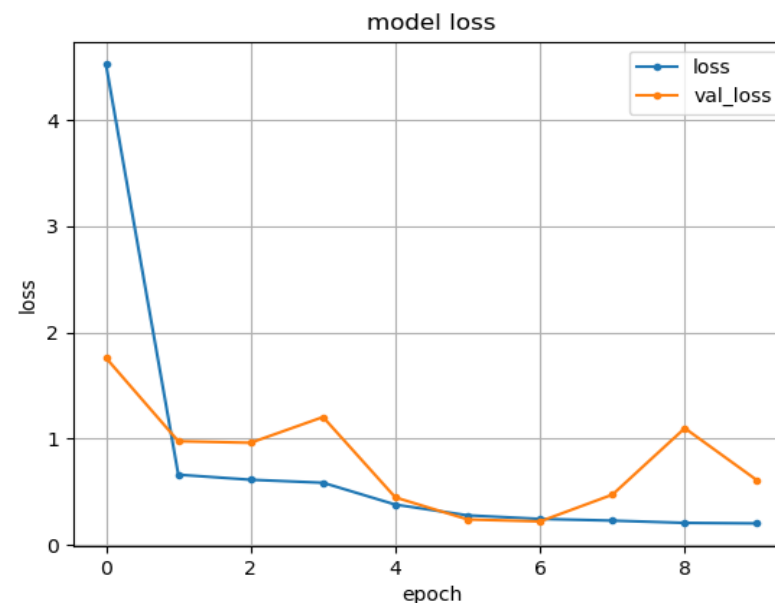
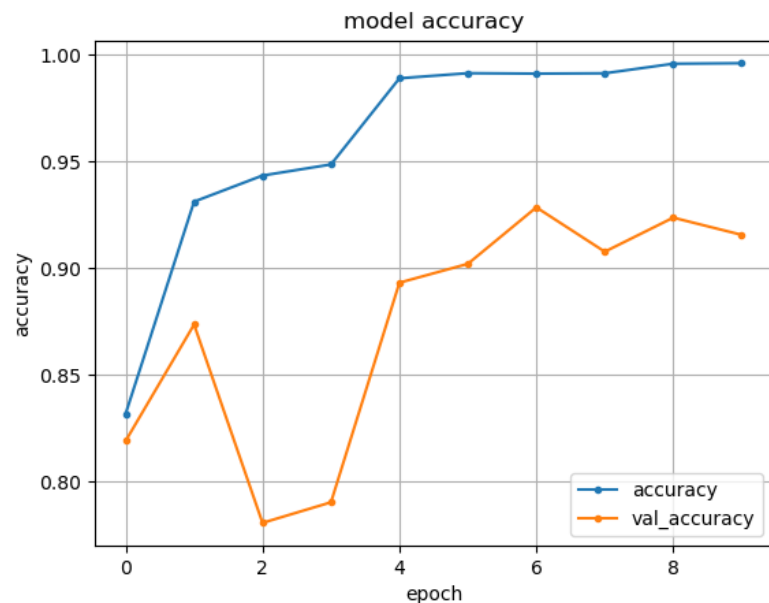
파일(F) 편집(E) 서식(O) 보기(V) 도움말(H)

```
1 Assault
2 Fighting
3 Shoplifting
4 Stealing
```

testlist.txt

```
UCF-Crime_Assault/Assault008_x264 0
UCF-Crime_Assault/Assault015_x264 0
UCF-Crime_Assault/Assault016_x264 0
UCF-Crime_Assault/Assault026_x264 0
UCF-Crime_Assault/Assault032_x264 0
UCF-Crime_Assault/Assault046_x264 0
UCF-Crime_Assault/Assault049_x264 0
UCF-Crime_Fighting/Fighting007_x264 1
UCF-Crime_Fighting/Fighting008_x264 1
UCF-Crime_Fighting/Fighting009_x264 1
UCF-Crime_Fighting/Fighting014_x264 1
UCF-Crime_Fighting/Fighting021_x264 1
UCF-Crime_Fighting/Fighting029_x264 1
UCF-Crime_Fighting/Fighting030_x264 1
UCF-Crime_Fighting/Fighting033_x264 1
```

## 2. 모델 학습



| epoch | loss                | acc                | val_loss            | val_acc            |
|-------|---------------------|--------------------|---------------------|--------------------|
| 0     | 4.521681026933664   | 0.831820547580719  | 1.761623740196228   | 0.819111704826355  |
| 1     | 0.6626187823016968  | 0.9311529994010925 | 0.9773479104042053  | 0.8735998868942261 |
| 2     | 0.6151374824790069  | 0.9433783888816833 | 0.9629164934158325  | 0.7807249426841736 |
| 3     | 0.586900120889692   | 0.9485661387443542 | 1.2049895524978638  | 0.7903702259063721 |
| 4     | 0.38128413365439845 | 0.9889091849327087 | 0.448679655790329   | 0.8932015895843506 |
| 5     | 0.2801266126070045  | 0.9913016557693481 | 0.24160578846931458 | 0.9020301699638367 |
| 6     | 0.2465236462266531  | 0.9911125302314758 | 0.22299440205097198 | 0.9284769892692566 |
| 7     | 0.23069243784038307 | 0.9912605285644531 | 0.4749302566051483  | 0.907708466053009  |
| 8     | 0.20932314102507302 | 0.9957412481307983 | 1.1001394987106323  | 0.923654317855835  |
| 9     | 0.20451746493091838 | 0.9959796667098999 | 0.6090080142021179  | 0.9156036376953125 |

- 모델의 정확도와 손실

### 3. 모델 테스트



Fighting prob: 0.9786  
Fighting prob: 0.9790  
Fighting prob: 0.9794  
Fighting prob: 0.9802  
Fighting prob: 0.9806  
Fighting prob: 0.9812  
Fighting prob: 0.9820  
Fighting prob: 0.9827  
Fighting prob: 0.9832  
Fighting prob: 0.9834  
Fighting prob: 0.9835  
Fighting prob: 0.9837  
Fighting prob: 0.9837  
Fighting prob: 0.9833  
Fighting prob: 0.9828  
Fighting prob: 0.9823  
Fighting prob: 0.9818  
Fighting prob: 0.9813

- 훈련된 모델에서의 평가 결과
- Fighting 동영상에서의 UCF-Crime 종목 판별과 프레임별 정확도

### 3. 모델 테스트



Stealing prob: 0.6631  
Stealing prob: 0.6881  
Stealing prob: 0.7222  
Stealing prob: 0.7520  
Stealing prob: 0.7858  
Stealing prob: 0.8169  
Stealing prob: 0.8374  
Stealing prob: 0.8488  
Stealing prob: 0.8620  
Stealing prob: 0.8779  
Stealing prob: 0.8917  
Stealing prob: 0.9025  
Stealing prob: 0.9134  
Stealing prob: 0.9213  
Stealing prob: 0.9267  
Stealing prob: 0.9318  
Stealing prob: 0.9386  
Stealing prob: 0.9426  
Stealing prob: 0.9455  
Stealing prob: 0.9436  
Stealing prob: 0.9383  
Stealing prob: 0.9280  
Stealing prob: 0.9171  
Stealing prob: 0.9006

## 4. 향후 계획

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- UCF-Crime 개선 사항 수정
- AIHUB 학습데이터를 사용하여 테스트
- 테스트 결과 확인
- 개선 사항 수정



# 감사합니다

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