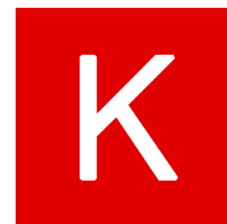


kaggle

with



Keras

부제 : 캐글과 케라스?

발표자 소개



TaeJin Kim

Senior Student at Pusan National Univ.
Pusan, South Korea
Joined a year ago · last seen in the past day





Competitions Expert

Followers 27

Following 23

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Competitions (9)

Kernels (5)

Discussion (35)

Datasets (1)

...

Competitions Expert

Current Rank

1398

of 122,431

Highest Rank

1267



0



3



1

Kernels Contributor

Unranked



0



1



2

Discussion Contributor

Unranked



1



2



16

Kaggle Korea



Note: No official relationship with Kaggle

캐글 코리아

Kaggle Korea

Non-Profit Facebook Group Community

함께 공부해서, 함께 나눕시다
Study Together, Share Together

오늘 이야기 할 것은?

Kaggle 이야기

Keras와 PyTorch

Keras with Kaggle



Inside Kaggle you'll find all the code & data you need to do your data science work. Use over 19,000 public datasets and 200,000 public notebooks to conquer any analysis in no time.

Kaggle 속으로





Featured Code Competition

APTOS 2019 Blindness Detection

Detect diabetic retinopathy to stop blindness before it's too late

\$50,000

Prize Money



Asia Pacific Tele-Ophthalmology Society (APTOS) · 2,943 teams · a month ago

당뇨 환자의 망막병증을 미리 감지해서 실명을 막을 수 있도록!



Image Classification

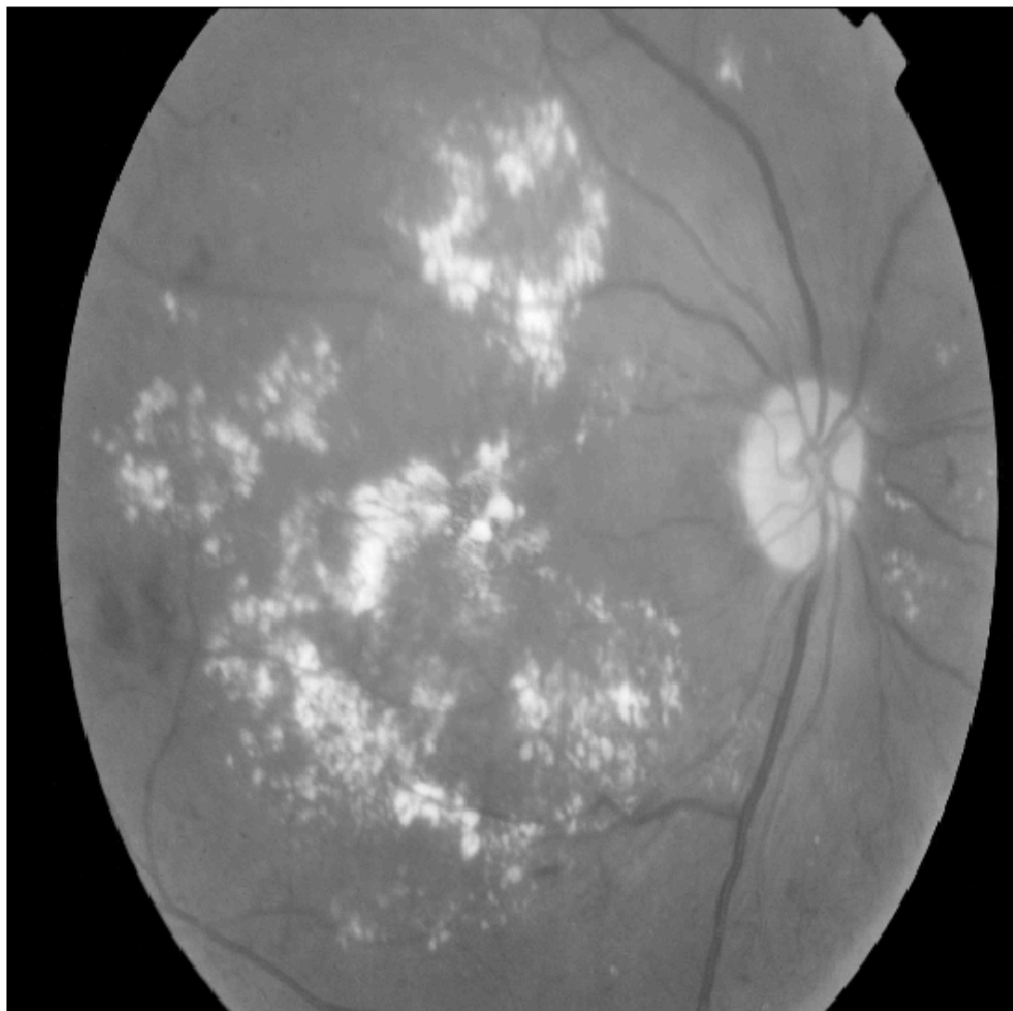
Label: 0-6c00dd8bf708



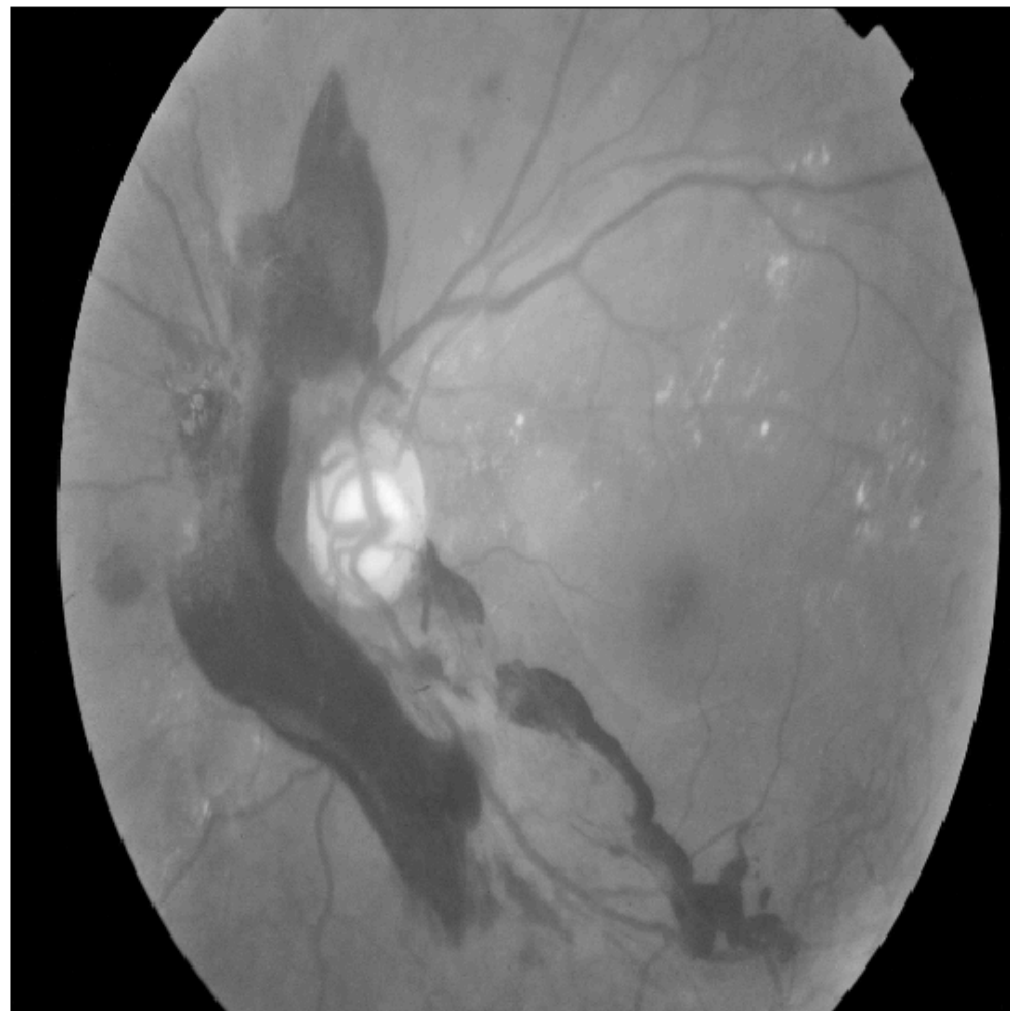
Label: 1-a443c4fd489c



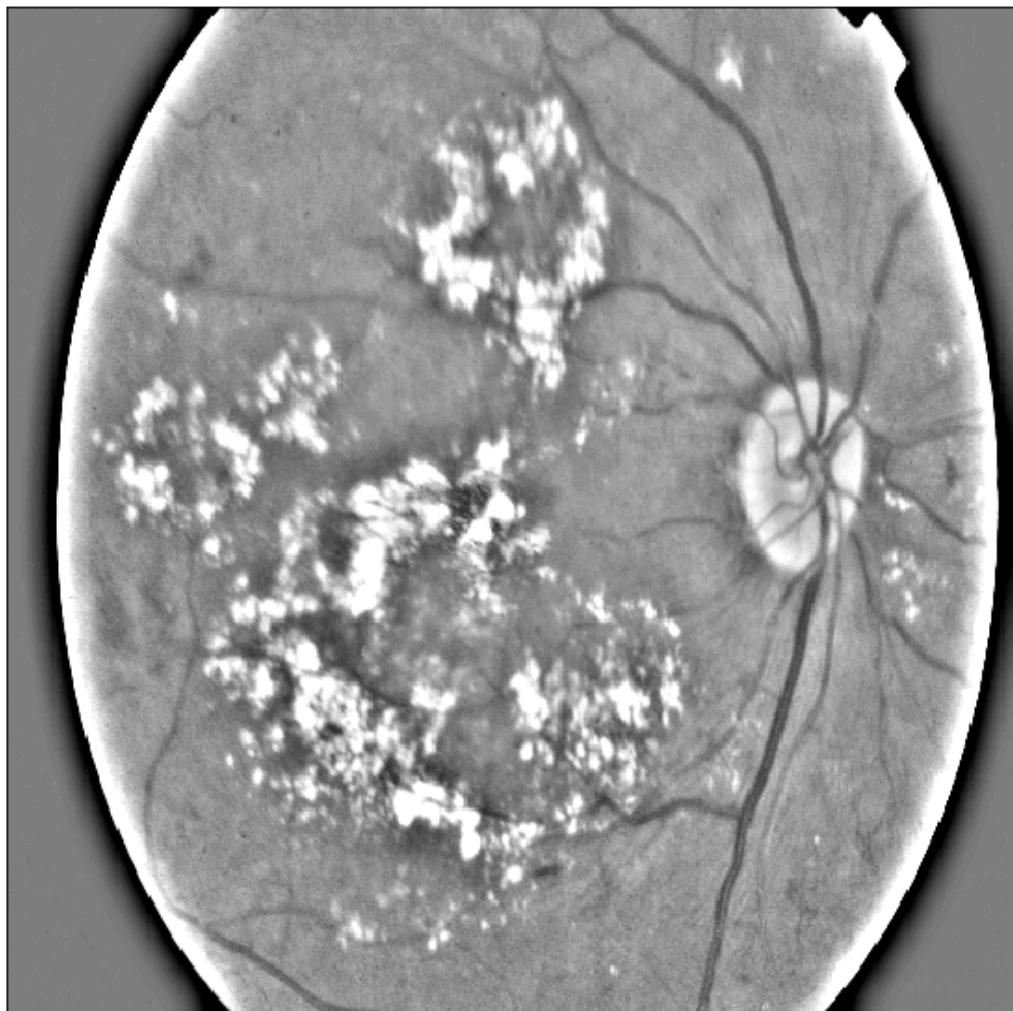
Label: 3-0f96c358a250



Label: 3-ebe0175e530c



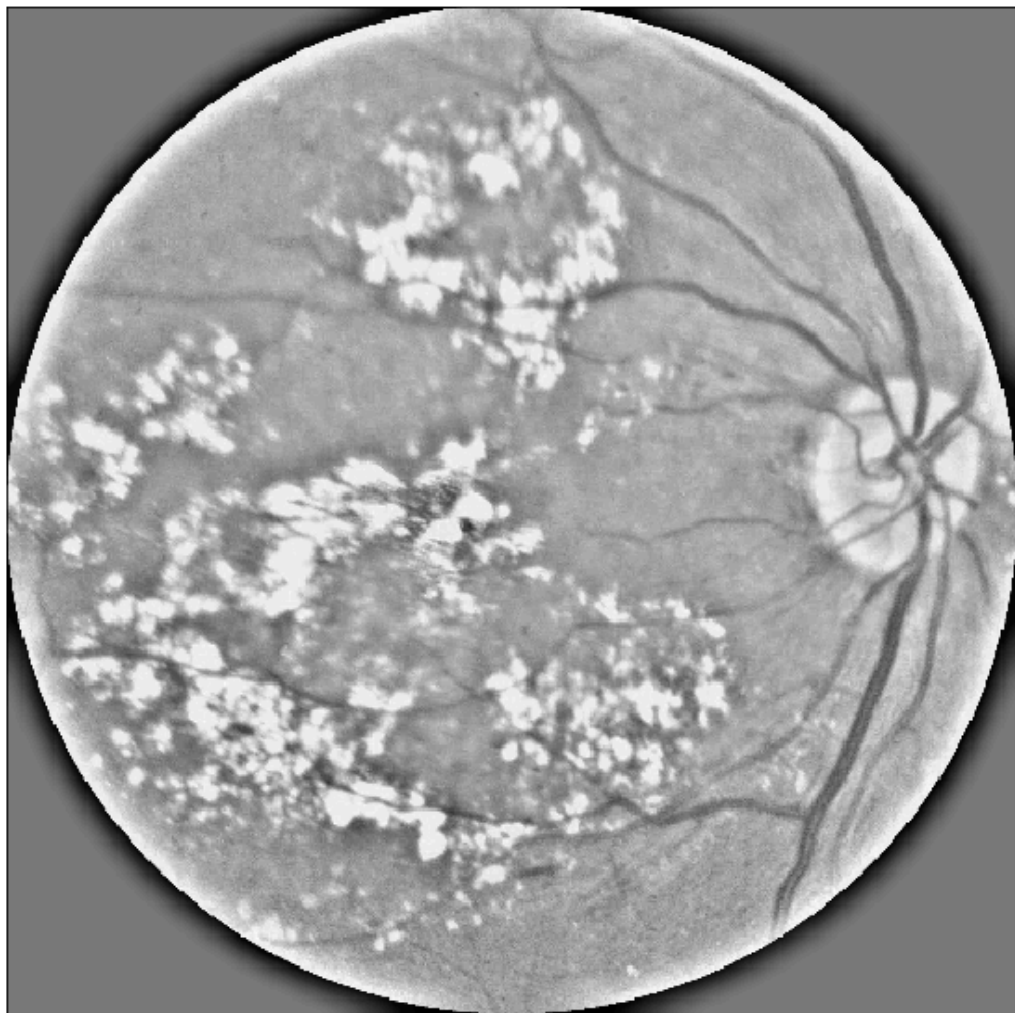
Label: 3-0f96c358a250



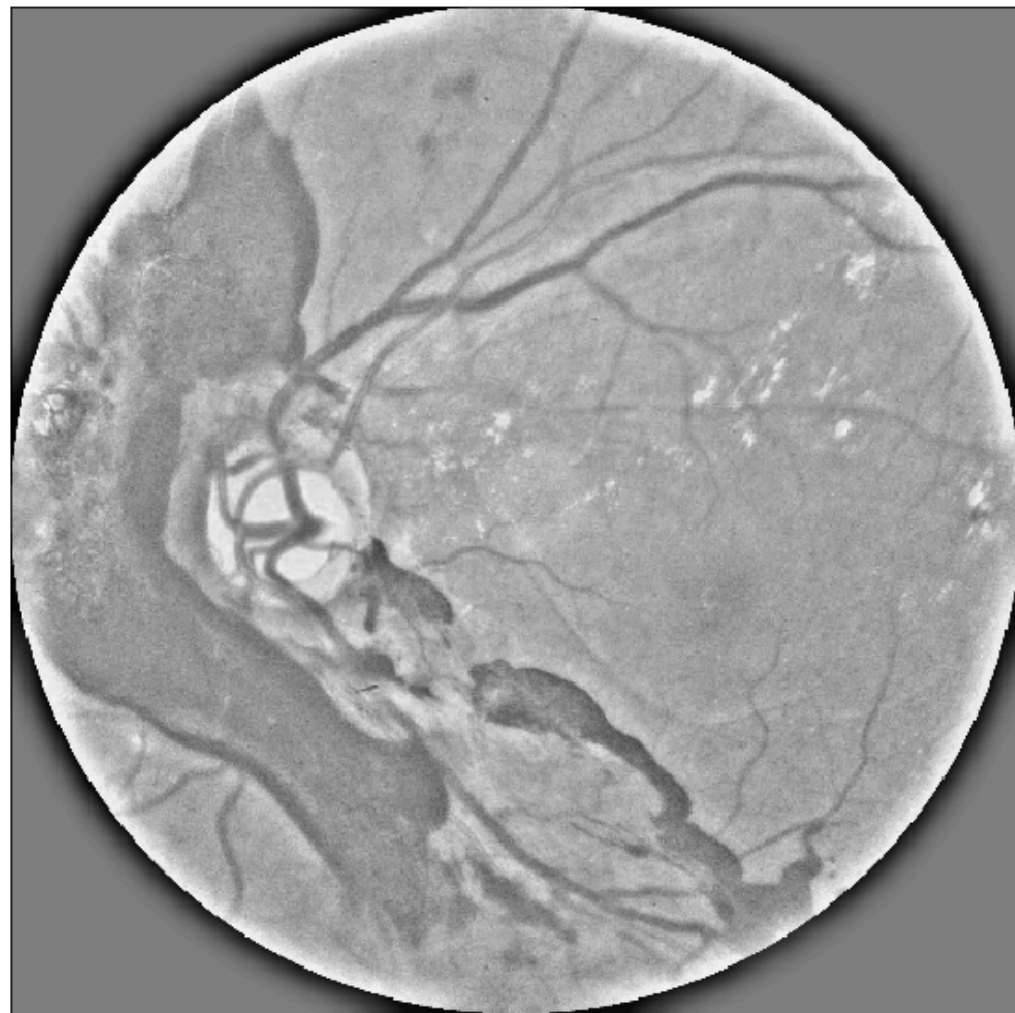
Label: 4-ebe0175e530c



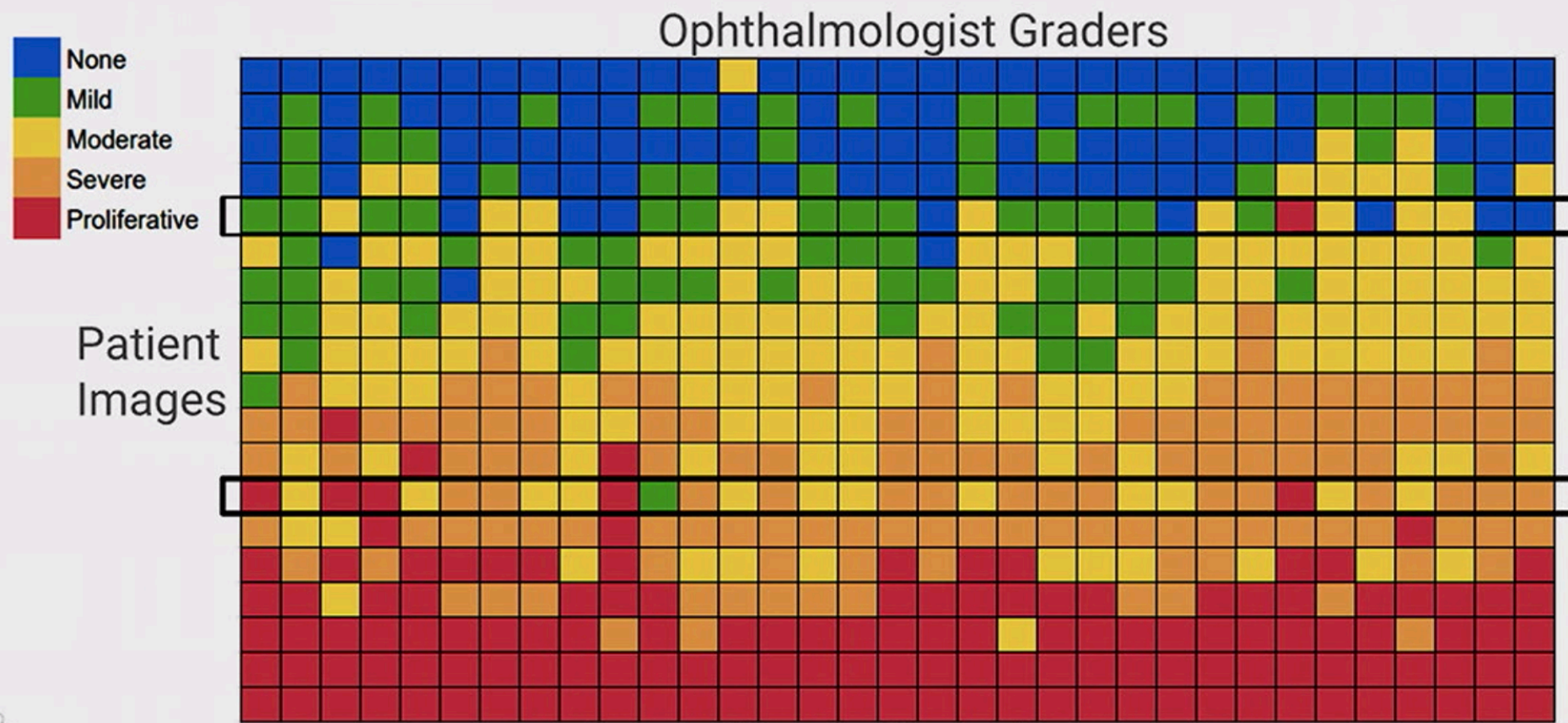
Label: 3-0f96c358a250



Label: 4-ebe0175e530c



Even when available, ophthalmologists are inconsistent



Consistency: intragrader ~65%, intergrader ~60%



어떻게 ?



672



APTOS : Eye Preprocessing in Diabetic Retinopathy

1mo ago ● GPU ● [eda, data cleaning, data visualization](#)



Py

125

414



Intro APTOS Diabetic Retinopathy (EDA & Starter)

3mo ago ● GPU ● [0.722](#) ● [beginner, classification, deep learning, starter code](#)



Py

32

384



pytorch inference kernel + lazy TTA

3mo ago ● GPU ● [0.758](#)



Py

81

306



APTOS 2019: DenseNet Keras Starter

3mo ago ● GPU ● [0.731](#) ● [healthcare, classification, cnn, starter code](#)



Py

70

271



Starter kernel for > 0.79

3mo ago ● GPU ● [0.783](#)



Py

77

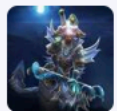
사람들이 다 알려줬어요!

**하지만, 공개된 방법 만으로는
높은 순위를 올라가지 못해요.**

시도 해본 것

- Augmentation
- Test Time Augmentation
- Transfer learning
- 전처리 이것저것...
- Ensemble...

Discussion에 숨어있는 알짜 팁들..



leixiang@seedsmed(希氏异构) • (324th in this Competition) • 2 months ago • Options • Reply

456, efficientnetb5 lb:0,824 single model



oct_path • (276th in this Competition) • a month ago • Options • Reply

I use 256 preprocessed by mean subtraction.
My best single model (EfficientNet-B4) got 0.829.
I've tried 320 and 512, but it was a waste of time.

Kernel, Discussion 파헤치면서 얻은 휴먼 러닝 & 모델 러닝의 결과는?

87	▼ 41	[ka.kr] let there be light	   	0.922689	189	1mo
00	▲ 12	himena	    	0.922666	05	1mo

이러고 끝?



Vopani

Options

🏆 Gold Medal Solutions 🏆

posted in [APTOS 2019 Blindness Detection](#) a month ago



65

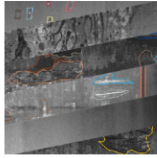
List of all gold medal solutions shared:

- 1st place solution by [Guanshuo Xu](#)
- 2nd place solution by [Mykhailo Matviiv](#)
- 4th place solution by [Qishen Ha](#)
- 5th place solution by [Gary](#)
- 7th place solution by [Eugene Khvedchenya \(GitHub\)](#)
- 8th place solution by [DrHB](#)
- 9th place solution by [Psi](#)
- 9th place solution by [Thomas Yokota](#)
- 10th place solution by [Camaro](#)
- 11th place solution by [4ui_iurz1 \(Notebook, GitHub\)](#)
- 12th place solution by [JIANJIAN](#)

Congrats and thanks for sharing!

금메달 보다 값진 솔루션들

14 Active Competitions



Severstal: Steel Defect Detection

Can you detect and classify defects in steel?

Featured · Code Competition · 11 days to go · manufacturing, image data

\$120,000

2,215 teams



NFL Big Data Bowl

How many yards will an NFL player gain after receiving a handoff?

Featured · Code Competition · a month to go · american football, sports

\$75,000

410 teams



Lyft 3D Object Detection for Autonomous Vehicles

Can you advance the state of the art in 3D object detection?

Featured · a month to go · image data, object detection

\$25,000

274 teams

342 Completed Competitions



The 3rd YouTube-8M Video Understanding Challenge

Temporal localization of topics within video

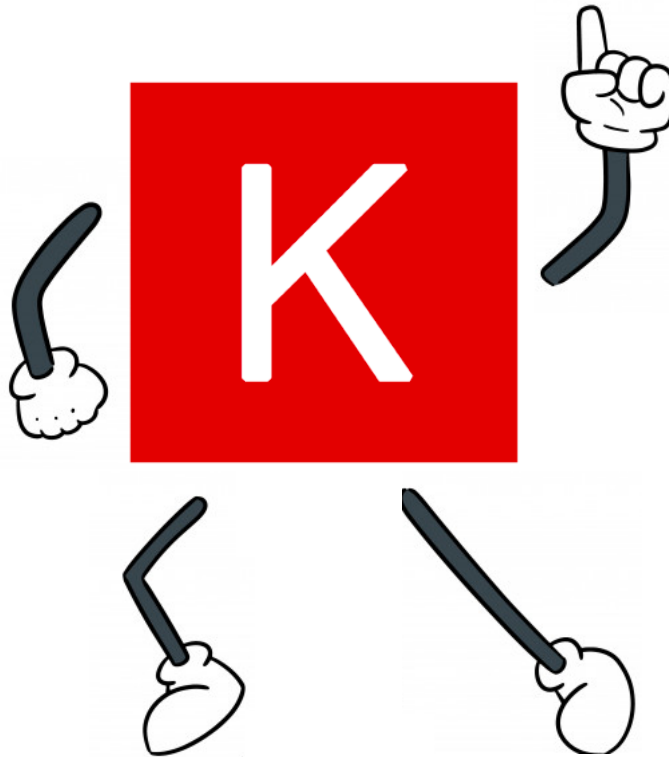
Research · 2 days ago · video data, object detection

\$25,000

283 teams

그 밖에 많은 컴퍼티션...

Keras



딥러닝 Framework 양대산맥?



라고는 하지만...

딥러닝 Framework 양대산맥?

in **kaggle**

 Keras **vs.**  PyTorch

 Keras **vs.**  PyTorch

High-level
NNs API

Low-level
NNs API

```
train_datagen = ImageDataGenerator(  
    shear_range=10,  
    zoom_range=0.2,  
    horizontal_flip=True,  
    preprocessing_function=preprocess_input)  
  
train_generator = train_datagen.flow_from_directory(  
    'data/train',  
    batch_size=32,  
    class_mode='binary',  
    target_size=(224,224))
```

```
normalize = transforms.Normalize(  
    mean=[0.485, 0.456, 0.406],  
    std=[0.229, 0.224, 0.225])  
train_transforms = transforms.Compose([  
    transforms.Resize((224,224)),  
    transforms.RandomAffine(0,  
                             shear=10,  
                             scale=(0.8,1.2)),  
    transforms.RandomHorizontalFlip(),  
    transforms.ToTensor(),  
    normalize])  
  
train_ds = datasets.ImageFolder(  
    'data/train', train_transforms)  
train_loader = torch.utils.data.DataLoader(  
    train_ds,  
    batch_size=32,  
    shuffle=True,  
    num_workers=4)
```



```
model = Sequential()
model.add(Conv2D(32, (3, 3),
                 activation='relu', input_shape=(32, 32, 3)))
model.add(MaxPool2D())
model.add(Conv2D(16, (3, 3), activation='relu'))
model.add(MaxPool2D())
model.add(Flatten())
model.add(Dense(10, activation='softmax'))

optimizer = keras.optimizers.Adam()
model.compile(loss='sparse_categorical_crossentropy',
              optimizer=optimizer,
              metrics=['accuracy'])
```

```
class Net(nn.Module):
    def __init__(self):
        super(Net, self).__init__()
        self.conv1 = nn.Conv2d(3, 32, 3)
        self.conv2 = nn.Conv2d(32, 16, 3)
        self.fc1 = nn.Linear(16 * 6 * 6, 10)
        self.pool = nn.MaxPool2d(2, 2)

    def forward(self, x):
        x = self.pool(F.relu(self.conv1(x)))
        x = self.pool(F.relu(self.conv2(x)))
        x = x.view(-1, 16 * 6 * 6)
        x = F.log_softmax(self.fc1(x), dim=-1)
        return x

model = Net()
criterion = nn.CrossEntropyLoss()
optimizer = optim.Adam(model.parameters())
```



```
history = model.fit_generator(  
    generator=train_generator,  
    epochs=3,  
    validation_data=val_generator)  
  
result = model.predict(test_data)
```

```
def run_train(model, criterion, optimizer, train_loader):
    model.train()
    loss = 0.
    for i, (imgs, labels) in enumerate(train_loader):

        optimizer.zero_grad()
        imgs_train, labels_train = imgs.to(device), labels.float().to(device)
        output_train = model(imgs_train)
        loss = criterion(output_train, labels_train)
        loss.backward()

        _, preds = torch.max(output_train, 1)
        acc += torch.sum(preds == labels_train.data) / len(train_loader)
        loss += loss.item() / len(train_loader)

    return acc, loss

num_epochs = 3
for epoch in range(num_epochs):
    print('Epoch {}/{}'.format(epoch+1, num_epochs))
    avg_acc, avg_loss = run_train(model, criterion, optimizer, train_loader)
```

 Keras vs.  PyTorch

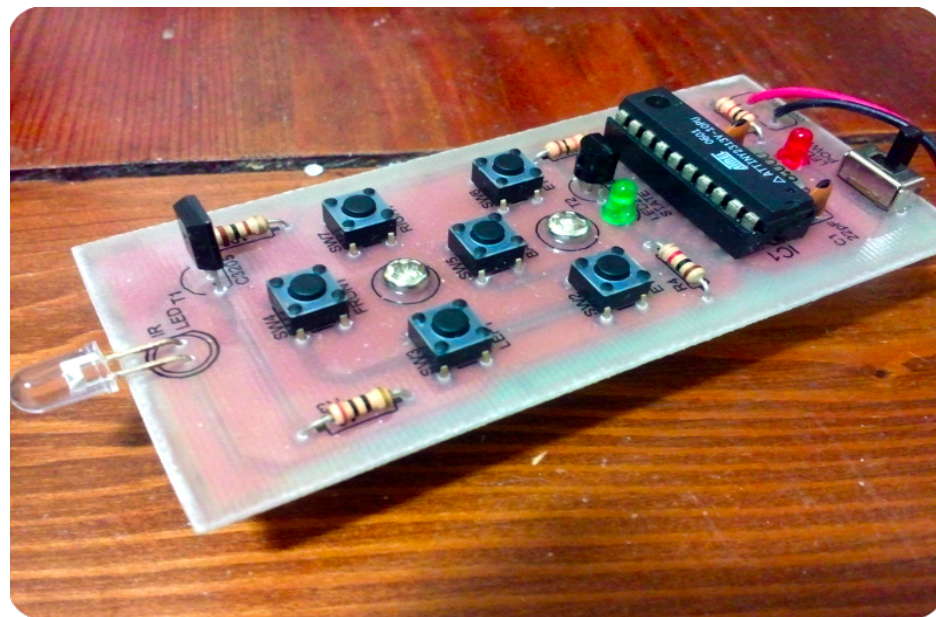
생산성

자유도

초보자도 쉽게

이론적 베이스

K Keras vs. PyTorch



어느 것이 **항상** 좋다고 말 할 수는 **없습니다**.

드디어..

Kaggle with Keras

케라스로 캐글을 한다는 것?

약간 진지하게 접근해 보려고요.

캐글을 하는 데 가장 중요한 것?

A. Submission

알파고가 쏘아 올린 작은 공..

너도 나도 Deep Learning

저는 케라스로 처음 딥러닝을 배웠고,
캐글에서 값진 경험을 할 수 있었습니다.

덕분에  쉽게  흥미를 가질 수 있었어요!

여러분들은 **흥미**를 찾으셨나요?

그리고, 지금, 무엇을 만들고 있나요?

들어주셔서 감사합니다