



#### FIRST BATCH

Start with a modern CNN architecture, adding pre-trained weights.

Next, freeze the model and rebuild the top with Global Avg Pooling, Batch Normalization, Dropout, and finally a dense layer with Softmax activation, followed by a training session.

#### **SECOND BATCH**

Now unfreeze the entire model (with the exception of Batch Normalization) and train again. Voilà, dinner is served!

## 100% Fresh

# **NOISY-STUDENT WEIGHTS**

CHEF'S CHOICE TRANSFER-LEARNING

#### **RESNET & EFFICIENTNETBO-B5**

PLUS EXTRA 20 LAYERS RETRAINED!

**CUSTOM LR-SCHEDULER** 

RAMPUP WITH STEP-DECAY/COSINE

## PREDICTIONS!

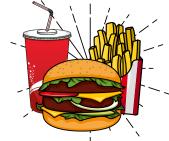
FOR KERAS' LOVERS



#### EFFICIENTNET B5

our menus!

50 epochs (with early stopping), 456x456 img resolution, batch size 32, cosine learning decay, 0.5 top-dropout rate, Noisy-Student weights, Adam optimizer, categorical crossentropy activation, softmax loss, avg pooling & batch normalization layers.



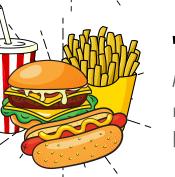
#### **EFFICIENTNET BO**

Kid menu version of B5: smaller net, 224x224 img resolution, batch-size 18 and step-decay learning.



#### RESNET 152

Traditional dish: 224x224 img resolution, weights from imagenet, 11 epochs, batch-size 32, relu activation for the dense layer, 0.2 dropout, softmax classifier, Adam optimizer.



#### "TOUS ENSEMBLE" FAMILY MENU

Max voting system: the most voted label among all models makes the final prediction. If the models disagree, the best model's prediction is chosen.



### **ALBUMENTATIONS**

RGB shift, blur, saturation and much more....

### **MORE GENERALIZATION**

Random flip, crop, scale...

58%

66%

68%





Universiteit van Amsterdam 😩