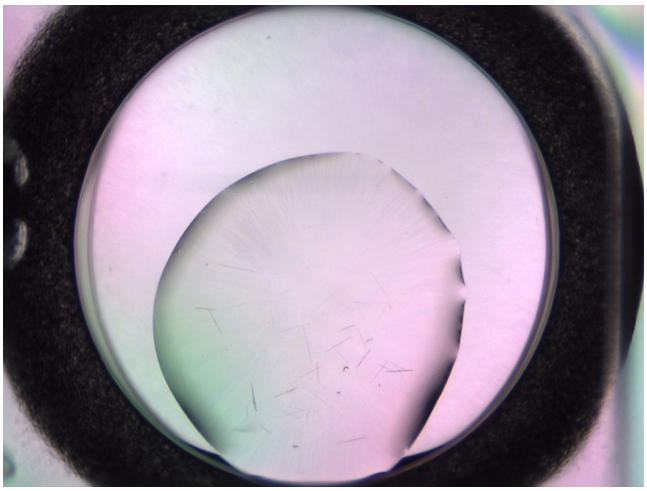
TensorFlow Requirement 1.x TensorFlow 2 Not Supported

Automating the Evaluation of Crystallization Experiments

This is a pretrained model described in the paper:

Classification of crystallization outcomes using deep convolutional neural networks.

This model takes images of crystallization experiments as an input:



It classifies it as belonging to one of four categories: crystals, precipitate, clear, or 'others'.

The model is a variant of Inception-v3 trained on data from the MARCO repository.

Model

The model can be downloaded from:

https://storage.googleapis.com/marco-168219-model/savedmodel.zip

Example

1. Install TensorFlow and the Google Cloud SDK.
2. Download and unzip the model:

```
unzip savedmodel.zip
```

3. A sample image can be downloaded from:

https://storage.googleapis.com/marco-168219-model/002s_C6_ImagerDefaults_9.jpg

Convert your image into a JSON request using:

```
python jpeg2json.py 002s_C6_ImagerDefaults_9.jpg > request.json
```

4. To issue a prediction, run:

```
gcloud ml-engine local predict --model-dir=savedmodel --json-instances=request.json
```

The request should return normalized scores for each class:

```
CLASSES                                          SCORES
[u'Crystals', u'Other', u'Precipitate', u'Clear']  [0.926338255405426, 0.026199858635663986,
0.026074528694152832, 0.021387407556176186]
```

CloudML Endpoint

The model can also be accessed on Google CloudML by issuing:

```
gcloud ml-engine predict --model marco_168219_model --json-instances request.json
```

Ask the author for access privileges to the CloudML instance.

Note

`002s_C6_ImagerDefaults_9.jpg` is a sample from the MARCO repository, contributed to the dataset under the CC BY 4.0 license.

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