

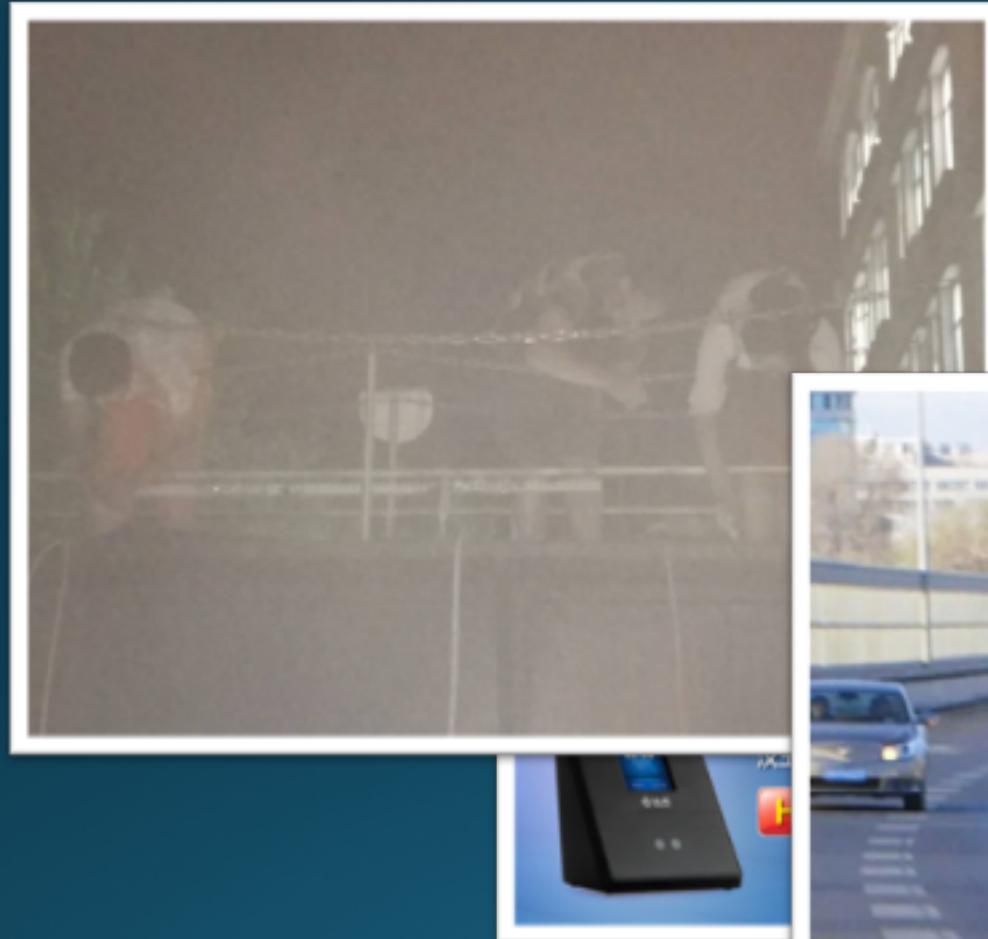
VISION@OUC

Plankton Recognition

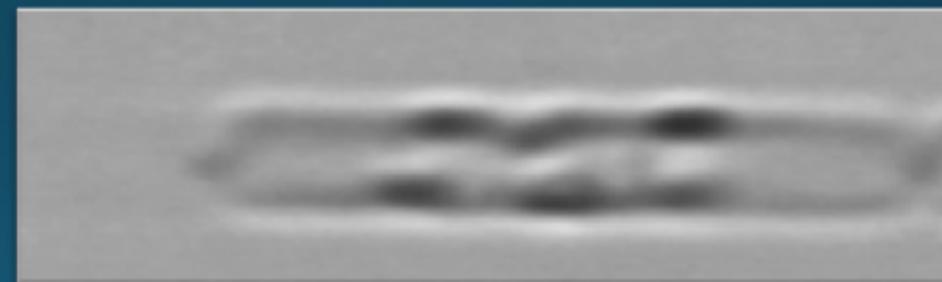
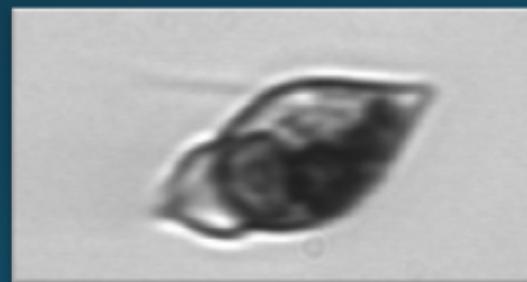
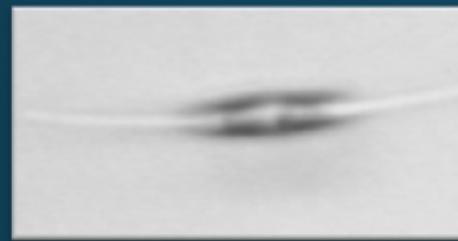
- Do different
- Concepts
- Competition
- Method & Difficulties
- Task







Driverless cars



Useful



Beautiful?



起点

终点

Other Lab



起点

We



终点

Other Lab



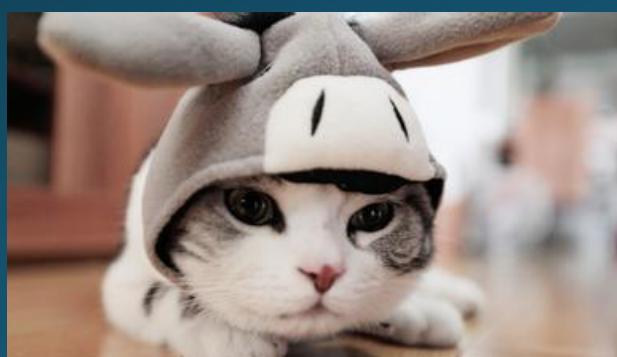
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Concepts

- Classification
- Recognition

- Classification

1.



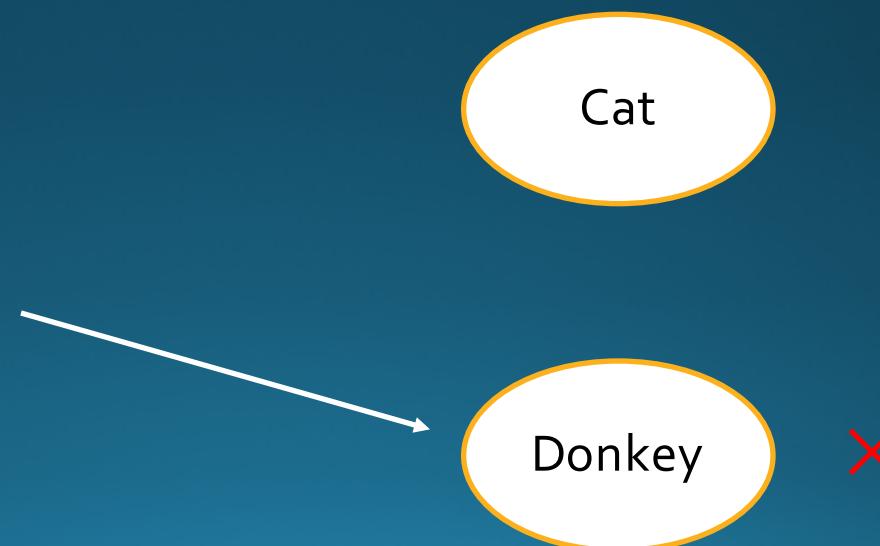
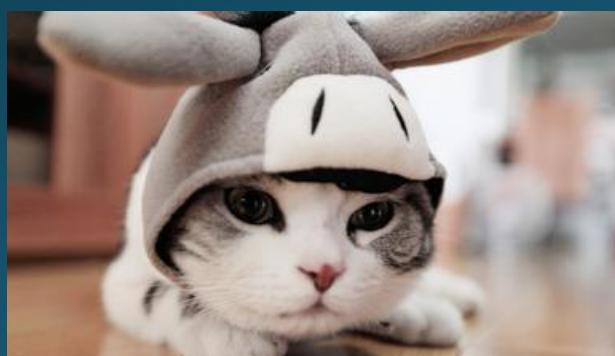
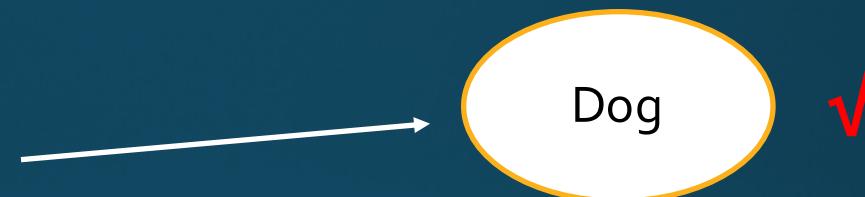
Dog

Cat

Donkey

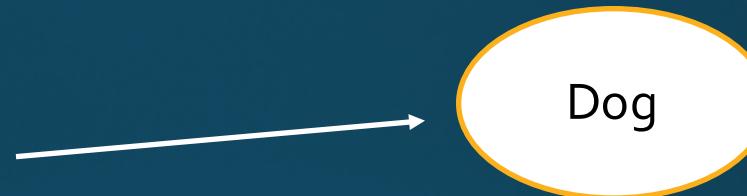
- Classification

1.

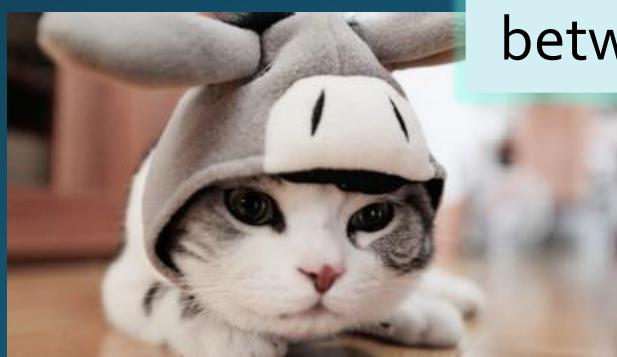


- Classification

1.



✓



The number of classification
is **equal** at
between testing and training



✗

2.



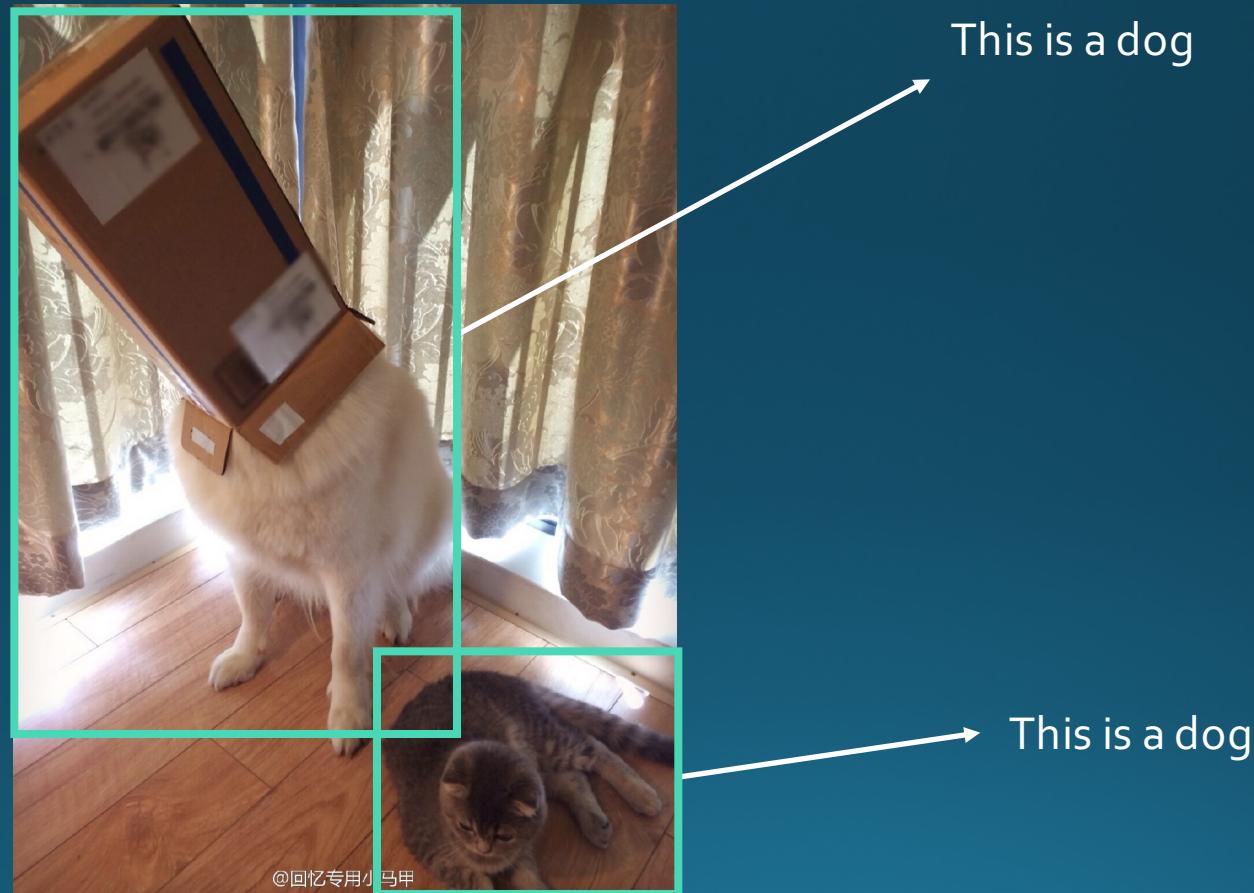
2.



- Recognition



- Recognition



- Do different
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ImageNet Challenge

IMAGENET Large Scale Visual Recognition Challenge 2016 (ILSVRC2016)

[News](#) [History](#) [Timetable](#) [Introduction](#) [Challenges](#) [FAQ](#) [Citation](#) [Contact](#)

News

- May 31, 2016: Register your team and download data at [here](#).
- May 26, 2016: Tentative time table is announced.
- May 3, 2016: Stay tuned. Coming soon.

History

[2015](#), [2014](#), [2013](#), [2012](#), [2011](#), [2010](#)

Tentative Timetable

- May 31, 2016: Development kit, data, and registration made available.
- September 9, 2016, 5pm PDT: Submission deadline.
- September 16, 2016: Challenge results released.
- October, 2016: Most successful and innovative teams present at [ECCV 2016 workshop](#).

Introduction

This challenge evaluates algorithms for object localization/detection from images/videos and scene classification/parsing at scale.

- I. [Object localization](#) for 1000 categories.
- II. [Object detection](#) for 200 fully labeled categories.
- III. [Object detection from video](#) for 30 fully labeled categories.
- IV. [Scene classification](#) for 365 scene categories (Joint with MIT Places team) on Places2 Database <http://places2.csail.mit.edu>.
- V. [Scene parsing](#) **New** for 150 stuff and discrete object categories (Joint with MIT Places team).

Microsoft Research

The screenshot shows the Microsoft Research homepage with a dark blue header. The header includes the Microsoft logo, navigation links for Store, Products, and Support, a search bar, and a Sign in button. Below the header, a secondary navigation bar features links for Research, Research areas, Products & Downloads, Programs & Events, People, Careers, and About. The main content area has a black background and displays the title "MSR Image Recognition Challenge (IRC)" in large white font, followed by the text "Established: March 24, 2014".

Microsoft Research is happy to continue hosting this series of Image Recognition (Retrieval) Grand Challenges. Do you have what it takes to build the best image recognition system? Enter these MSR Image Recognition Challenges in ACM Multimedia and/or IEEE ICME to develop your image recognition system based on real world large scale data.

Current Challenge: MS-Celeb-1M: Recognizing One Million Celebrities in the Real World

[Details: MSR Image Recognition Challenge @ ACM MM 2016](#)

Latest Updates:

Plankton Recognition Challenge

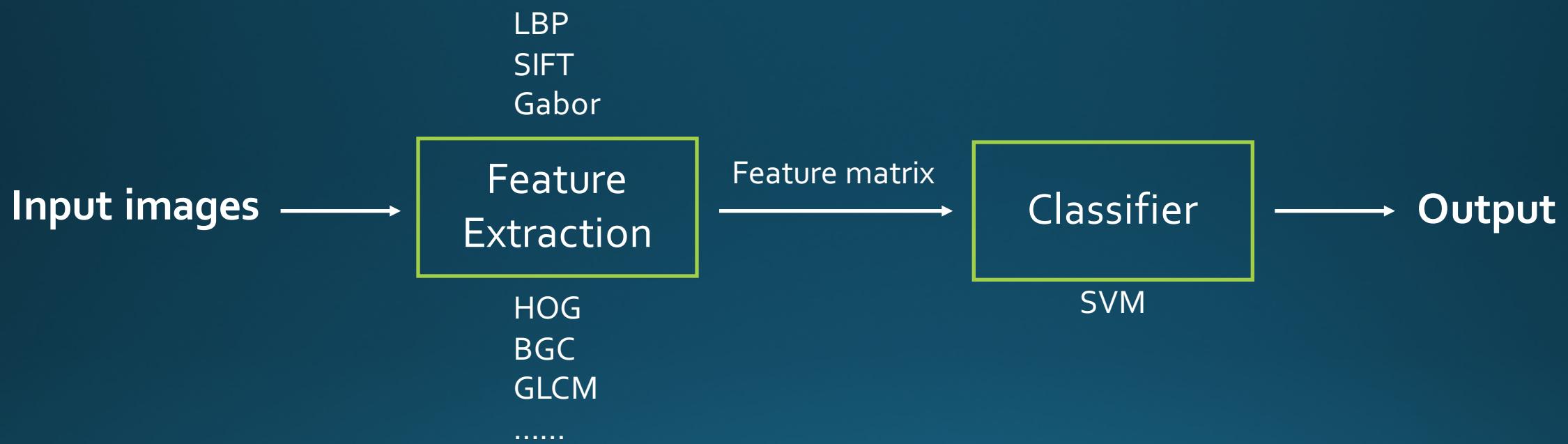


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Deep Learning



Traditional



Difficulties — Segmentation

- Cilium

Difficulties — Features

- Size: Very, very small
- Shape: unclear and various
- Color: no color (image)

Difficulties — The selection of classifiers

Difficulties — Segmentation

- Cilium

Difficulties — Features

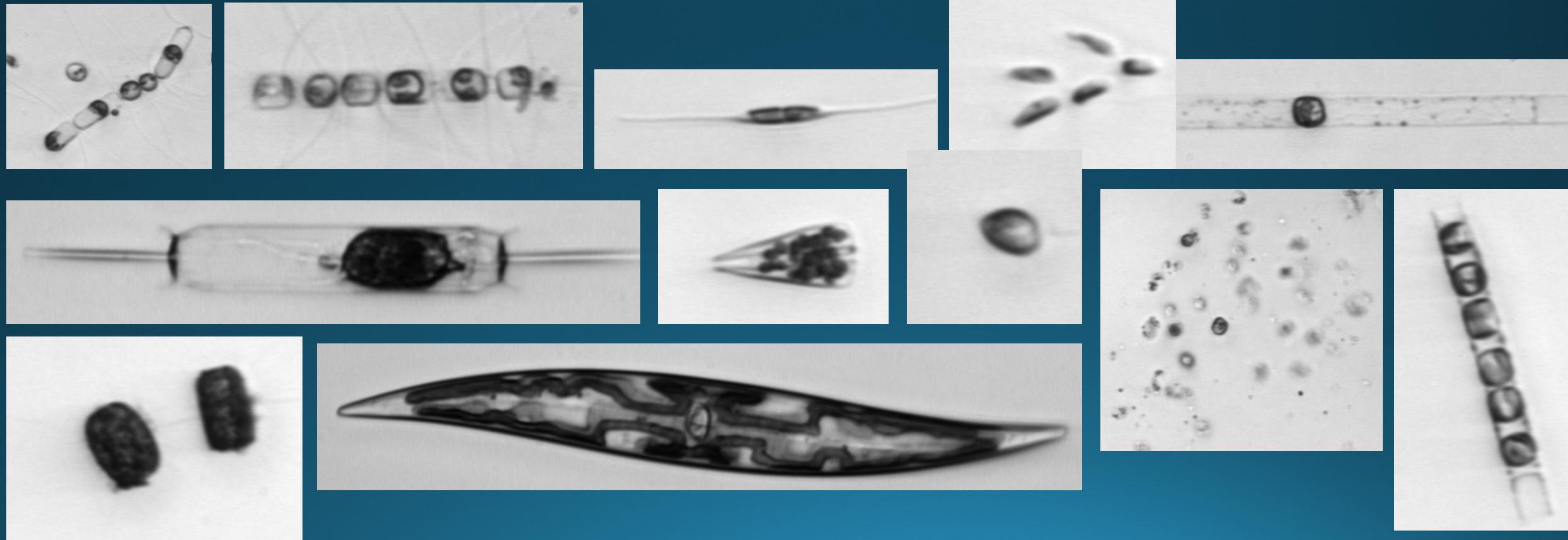
- Size: Very, very small
- Shape: unclear and various
- Color: no color (image)

Difficulties — The selection of classifiers



Image

Both Deep Learning and Traditional method need:



Both Deep Learning and Traditional method need:



Dataset

- Do different
- Concepts
- Competition
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Dataset

ASLO 22

WHOI 103

Kaggle 121

Zooscan 19

A 249

B 44

C 22

D 22

ZhengLab 4

Dataset

ASLO 22

WHOI 103

Kaggle 121

Zooscan 19

A 249

B 44

C 22

D 22

ZhengLab 4

A 249
B 44
C 22
D 22
ZhengLab 4

OUC

Task

Annotation —— .xml

Preprocess —— Removing noise, segmentation

Feature extraction

Classification —— SVM, generating a baseline of recognition accuracy

Coding is already!

Task

Annotation —— .xml

Objection Detection

Preprocess —— Removing noise, segmentation

Feature extraction

Classification —— SVM, generating a baseline of recognition accuracy

Coding is already!

Task

Annotation —— .xml

Preprocess —— Removing noise, *segmentation*

Feature extraction

Classification —— SVM, generating a baseline of recognition accuracy

Coding is already!

Task

Annotation —— .xml

Preprocess —— Removing noise, segmentation

Feature extraction

Dimensional Reduction

Classification —— SVM, generating a baseline of recognition accuracy

Coding is already!

Task

Annotation —— .xml

Preprocess —— Removing noise, segmentation

Feature extraction

Classification —— SVM, generating a baseline of recognition accuracy

Coding is already!

Task

Annotation —— .xml before 2016.9.1

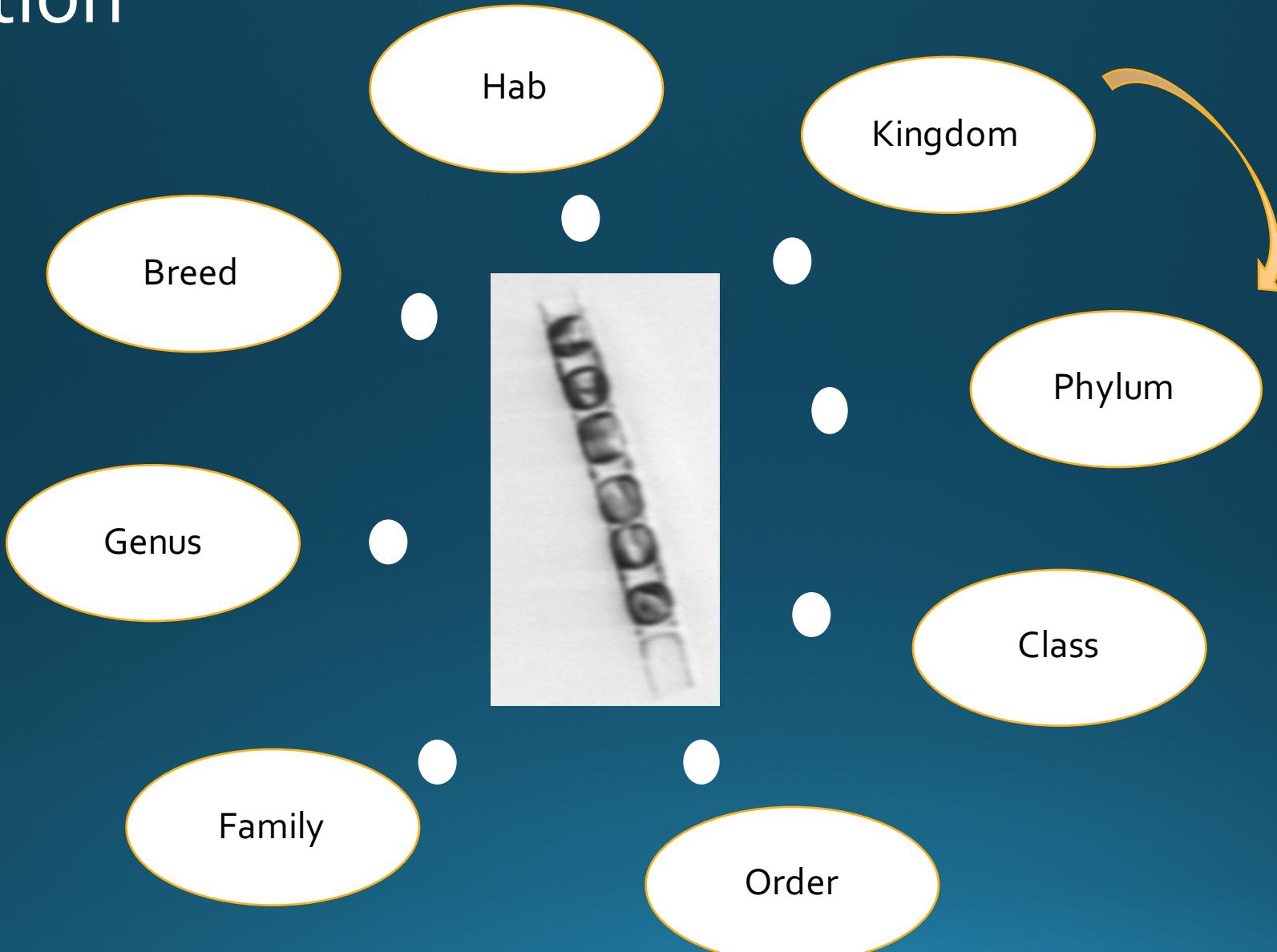
Preprocess —— Removing noise, segmentation

Feature extraction

Classification —— SVM, generating a baseline of recognition accuracy

Coding is already!

Annotation





Thank you!

Lin Chang