T11: Challenge

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Deep Learning – EIHW – University Augsburg

Agenda

Challenges

Why are Challenges / Competitions Import in ML?

- Competition in ML to get best result on a dataset under specific rules

- Great opportunity for learning.

- Getting exposed to state of the art approaches and datasets.

- Networking with like-minded people.

- Showcasing your talent.

- The Prizes.

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Scientific Challenges

What kind of Challenges are there?

- Audio

  - ComParE (INTERSPEECH)

  - Mediaeval

- Video

  - FG-2020 – Affect in the Wild

- Multimodal

  - AVEC

- AutoML

  - Automated Deep Learning (AutoDL) – NIPS

- Climate Data

  - Causality for Climate (C4C) – NIPS

- Online Communities like Kaggle

Challenges

EIHW Challenges

- The Computational Paralinguistics Challenge (ComPaRe)

- Interspeech since 2009

	# Classes	%UA/*AUC/CC
Personality	5	70.4
Likeability	2	68.7
Intoxication	2	72.2
Age	4	53.6
Sincerity	[0,1]	65.4
Autism	4	69.4
Deception	2	72.1
Cold	2	72.0

Intel Image Classification

- Image Classification with 6 different scenes

Forest

Mountain

Glacier

Building

Street

Sea

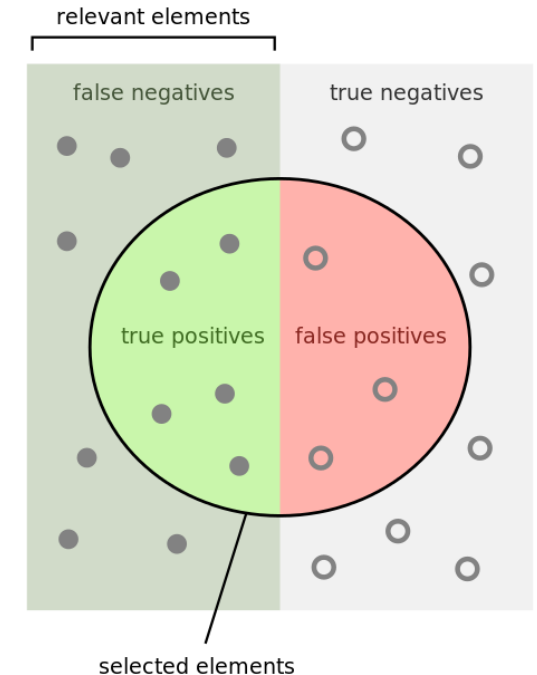# Intel Image Classification

Why this Data Set

- Computer Vision is probably the most popular and most successful application of DL

- Relatively small amount of data

  - No access to GPU Server

  - Additional challenge

- Possible to try different approaches

- Kaggle: huge online community for data science

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Intel Image Classification

Goal

- Achieve highest accuracy (micro/weighted) on test set

  - Number of correct classified data points / Number of total Data Points

  - Alternative name in this context: precision

- Other metrics are also often used

  - Recall

  - Weighted vs unweighted (micro vs macro)

Intel Image Classification

- Any Deep Learning approach is allowed

- Possibly look into

  - Data augmentation, transfer learning

- Use random seed 42 to make results reproducible

  - It is also common to average results over multiple repetitions of the training

- Use Test set only for FINAL evaluation

- Do NOT alter the test set (e.g., data augmentation, etc.)

- Try to beat the baseline of 90%

- Prepare 5 min presentation

- Submission: 03 Feb 23:59

- Presentations on 05 Feb