TEACHING STUDENTS

HOW TO TEACH MACHINES

Eva Mohedano and Xavier Giró
Signal Theory and Communications Dept.
Universitat Politècnica de Catalunya

E. Mohedano, X.Giró, "Teaching students to teach computers", CIDUI 2012
HOW CAN MACHINES LEARN?

CHALLENGE-BASED LEARNING

THE ACTIVITY

RESULTS & CONCLUSIONS

E. Mohedano, X. Giró, "Teaching students to teach computers", CIDUI 2012
HOW CAN MACHINES LEARN?

Unlabelled data → Labelled data → Feature extraction → Classification algorithm → Predicted label

E. Mohedano, X. Giró, "Teaching students to teach computers", CIDUI 2012
HOW CAN MACHINES LEARN?

FEATURE EXTRACTION

E. Mohedano, X. Giró, "Teaching students to teach computers", CIDUI 2012
HOW CAN MACHINES LEARN?

CLASSIFICATION ALGORITHM

DAY

NIGHT

E. Mohedano, X. Giró, "Teaching students to teach computers", CIDUI 2012
WHAT IS MACHINE LEARNING?

CHALLENGE-BASED LEARNING

THE ACTIVITY

RESULTS & CONCLUSIONS

E. Mohedano, X. Giró, "Teaching students to teach computers", CIDUI 2012
PROBLEM-BASED LEARNING

= 

CHALLENGE-BASED LEARNING

+ 

SCIENTIFIC EVALUATION

E. Mohedano, X.Giró, "Teaching students to teach computers", CIDUI 2012
CHALLENGE-BASED LEARNING

SELF-LEARNING

ORAL & WRITING

TEAM WORK

E. Mohedano, X. Giró, "Teaching students to teach computers", CIDUI 2012
WHAT IS MACHINE LEARNING?

CHALLENGE-BASED LEARNING

THE ACTIVITY

RESULTS & CONCLUSIONS

E. Mohedano, X. Giró, "Teaching students to teach computers", CIDUI 2012
1. Introduction & Evaluation Metrics

2. Selection of the concept

3. Data collection

4. Mock evaluation

5. Final evaluation

E. Mohedano, X.Giró, "Teaching students to teach computers", CIDUI 2012
WHAT IS MACHINE LEARNING?

CHALLENGE-BASED LEARNING

THE ACTIVITY

RESULTS & CONCLUSIONS

E. Mohedano, X.Giró, "Teaching students to teach computers", CIDUI 2012
RESULTS
RESULTS

TEAMS MANAGEMENT

E. Mohedano, X. Giró, "Teaching students to teach computers", CIDUI 2012
RESULTS

WORKLOAD

E. Mohedano, X. Giró, "Teaching students to teach computers", CIDUI 2012
RESULTS

Students satisfaction

• I missed more guidelines to extract visual features.
• Amusing activity that proved useful to learn the contents of the course and discover new things.
• Too much workload for too little impact in the final grade.
• I liked this activity, I learned and it was amusing.

E. Mohedano, X.Giró, "Teaching students to teach computers", CIDUI 2012
WEAKNESSES
- Desigual team work
- Specialization tasks
- Confusion of the student

THREATS
- Guided work

STRENGTHS
- Autodidactic method
- Competitiveness & Motivation
- Support from the teacher

OPPORTUNITIES
- Practical learning
- Assimilation of concepts

E. Mohedano, X.Giró, "Teaching students to teach computers", CIDUI 2012
THANK YOU

Eva Mohedano Robles  
evamohe@gmail.com

Xavier Giró-i-Nieto  
xavier.giro@upc.edu

E. Mohedano, X-Gro, "Teaching students to teach computers", CIDUI 2012
Criteria for the grading of students

- Mock evaluation & final evaluation: 60
- Evaluation of the image classifier: 20
- Software and documentation delivered: 20

E. Mohedano, X. Giró, "Teaching students to teach computers", CIDUI 2012