

Challenges in Machine Learning (CiML'17)



JACOB ABERNETHY,
UNIVERSITY OF MICHIGAN

SERGIO ESCALERA,
UNIVERSITY OF BARCELONA
AND CHALEARN

ISABELLE GUYON,
UPSUD/INRIA, U. PARIS-
SACLAY AND CHALEARN

EVELYNE VIEGAS,
MICROSOFT AI & RESEARCH

The value of Challenges

Research: advance state-of-the-art, venturing in new domains

Productize: cost-effective way to bring to industry solutions from research

Teaching: “playful” resource for students to learn curricula, experimental design, project leadership

Learning: upskill workforce to be a part of the digital transformation; curiosity-oriented learning

Participants: undergraduates, developers, retirees

**Important to regularly bring together
workshop organizers, platform providers
and participants**

```
graph TD; A[Important to regularly bring together workshop organizers, platform providers and participants] --- B[Best practices in challenge organization]; A --- C[Designing high impact challenges];
```

**Best practices
in challenge
organization**

**Designing high
impact
challenges**

The Future of Challenges

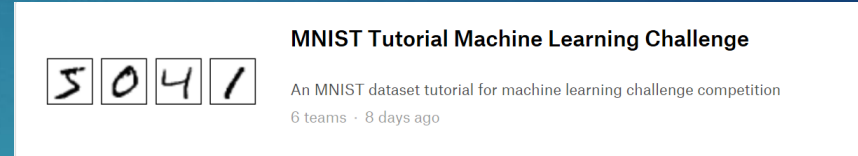
Competitions



Longitude Prize, 1714



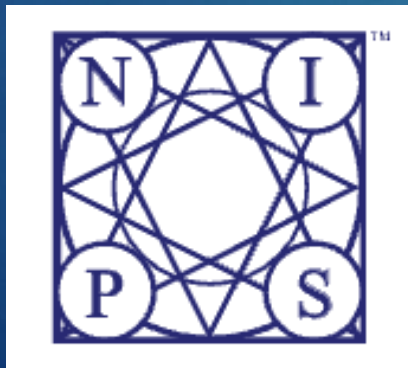
Bring research
to industry



Training in classroom



Upskilling in industry



NIPS 2017 Competition Track

This is the first NIPS edition on "NIPS Competitions". Evaluation was based on the quality of data, problem interest and impact, promoting the design of new models, and a proper schedule and managing procedure.

CiML'15

Open innovation and Coopetitions

Open innovation
(data, creativity)

Coopetitions
(collaboration within
competition)

Platforms, protocols
(code submission)

Dissemination, and
recognition

CiML'16

Challenges as teaching tools

Problem-solving skills
best practices in machine
learning

Continuous education and up-
skilling in the enterprise

Curricula creation via rigorous
experimental design,
reproducible research, and
project leadership

Platforms, protocols
(code submission)

CiML'17

Challenges as a Research Tool

Benefits and limitations of challenges as a research tool

Experimental design to foster contributions that will push the state of the art

Methods to induce and train young researchers

<http://ciml.chalearn.org/open-questions>

AGENDA

- 8:00 Welcome, New platforms & designs, E. Viegas
- 8:10 **RAMP platform**, B. Kégl
- 8:40 Automatic evaluation of chatbots, V. Logacheva, M. Burtsev
- 9:10 TrackML, D. Rousseau
- 9:40 Data science bowl, D. Farris
- 10:10 **CrowdAI**, M. Sarada
- 10:40 Break, poster viewing**
- 11:00 **Kaggle platform**, B. Hamner
- 11:30 **Incentivizing productivity in data science**, J. Abernethy
- 12:30 Lunch break – Discussions and poster viewing**
- 1:30 Exciting results, upcoming challenges, I. Guyon
- 1:40 **Project Malmo**, K. Hofmann
- 2:10 Project Alloy, L. Seaman
- 2:40 Education and public service, J.C. Stroud
- 3:10 Break, poster viewing**
- 3:30 **AutoDL**, O. Bousquet
- 4:00 Scoring rule markets, R. Frongillo & B. Waggoner
- 4:30 ENCODE-DREAM challenge, A. Balsubramani
- 5:00 **Codalab platform**, E. Viegas, I. Guyon & S. Escalera
- 5:30 **New opportunities for challenges**, S. Escalera
- 6:20 Wrap up, I. Guyon