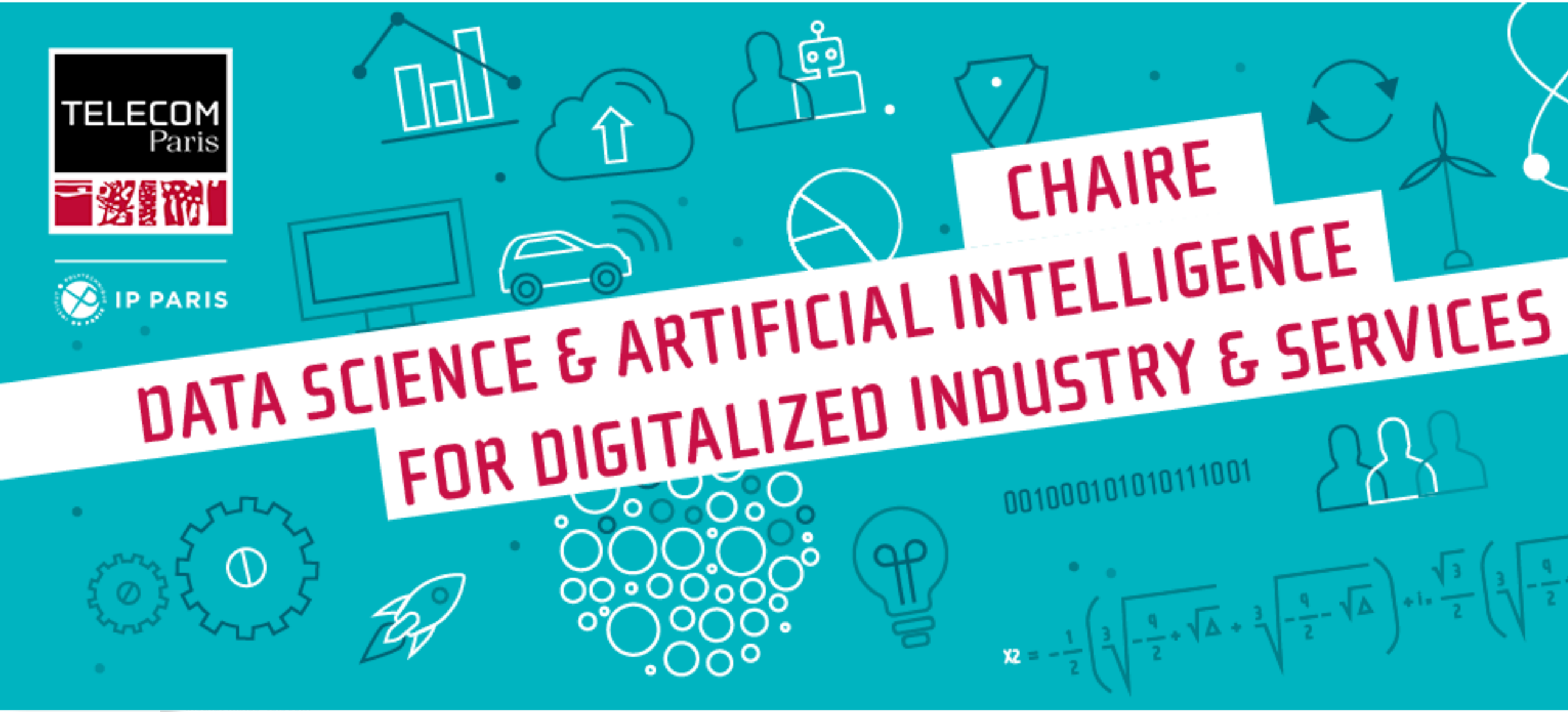
TELECOM Paris

IP PARIS

CHAIRE
DATA SCIENCE & ARTIFICIAL INTELLIGENCE FOR DIGITALIZED INDUSTRY & SERVICES



AIRBUS ENGIE IDEMIA SAFRAN Valeo ?

DSAIDIS in a few words

- Who ?

+

academic team @Télécom Paris [20 professors, 8 PhD students, 4 postdocs/ engineers]

- What ? Develops research and training on a dedicated program, fosters collaborations between academic and industry, anticipates new needs

- How much ? Budget := 2,25 M€

- When ? From 2019 to 2023

DSAIDIS: what for ?

Specific issues of Data Science in Industry and Services

- data collected all along the life of a product/service

- noisy data, contaminated data, extreme values, missing values

- drifting distributions, out-of-sample distribution

- heterogeneous data: internal data / exogeneous data, multi-scale/sources,

How to develop Machine Learning Tools
able to learn and predict in realistic conditions ?

DSAIDIS: what for ?

Main challenges in AI for industry and services

- Trustworthiness: robustness, fairness, (privacy), explainability
+ frugality

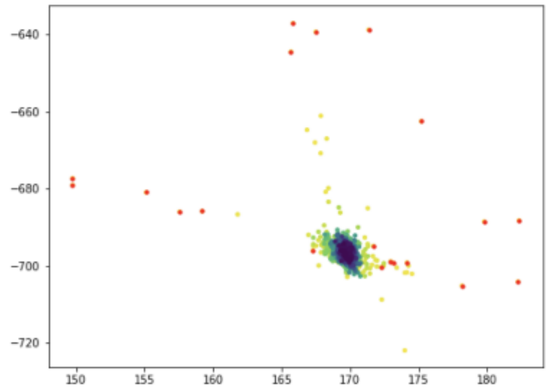
- re-use of ML tools, domain/user adaptation, online and continuous learning

- AI for new usages / new tools / new services

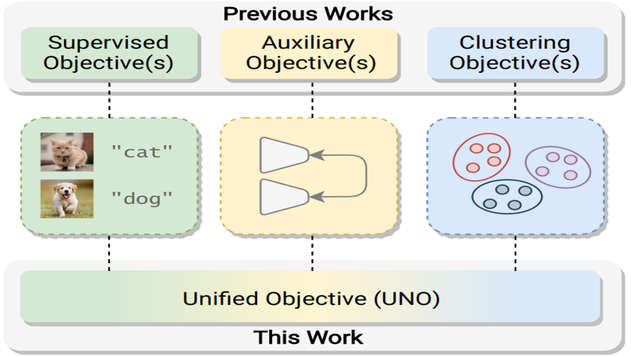
How to develop trustworthy Machine Learning tools, i.e. Machine Learning with guarantees on some required properties?

Trustworthy Learning in realistic conditions

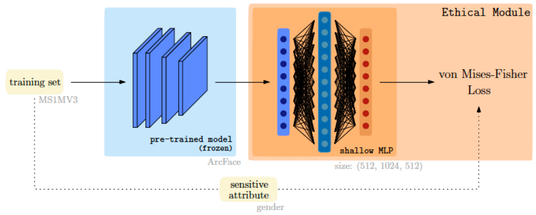
Outliers Diagnosis / Robust Learning



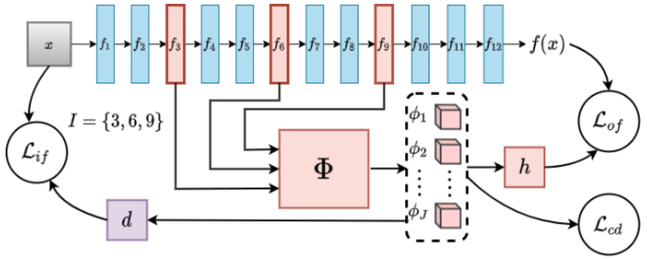
Transfer Learning /Open-set recognition



Correction of selection bias



Learning with interpretability



DSAIDIS in numbers

243 International publications – strong links with international community

Several best paper awards: AAAI 22, ACM ICMI 21, ICASSP 20

7 « ateliers des partenaires », 15 « fil rouge » projects ,
6 data-challenges/year

Success story: drastic reduction of reject rate on Valeo production lines (from 2% to 1%), on-going CIFRE PhD thesis (4), bilateral projects, ANR/BPI/european projects, common lab….