Application BASTRI

Fiches Equipes

MAGNET (SR0739PR)

Machine Learning in Information Networks
MAGNET (SR0550PR) MAGNET

Statut: Décision signée

Responsable : Marc Tommasi

Mots-clés de "A - Thèmes de recherche en Sciences du numérique - 2023" : A5.7.3. Parole , A5.8. Traitement automatique des langues , A9.2. Apprentissage , A9.4. Traitement automatique des langues , A9.9. IA distribuée, multi-agents

Mots-clés de "B - Autres sciences et domaines d'application - 2023" : B2. Santé , B9.5.1. Informatique , B9.5.6. Science des données , B9.6.8. Linguistique , B9.6.10. Humanités numériques , B9.9. Ethique , B9.10. Confidentialité, vie privée

Domaine : Perception, Cognition, Interaction
Thème : Représentation et traitement des données et des connaissances

Période : 01/05/2016 -> 31/12/2024
Dates d'évaluation : 03/10/2019 ,

Etablissement(s) de rattachement : CNRS, UNIVERSITE DE LILLE
Laboratoire(s) partenaire(s) : CRISTAL (9189)

CRI : Centre Inria de l'Université de Lille
Localisation : Centre Inria de l'Université de Lille
Code structure Inria : 101044-1

Numéro RNSR : 201321079K
N° de structure Inria: SR0739PR

Présentation

A primary objective of Magnet is in making artificial intelligence more acceptable to society by solving some ethical issues of Machine Learning (ML) and on empowering end users of artificial intelligence. From a scientific perspective we focus on privacy, fairness, (data) sobriety. Our approaches are typically based on the common theme of leveraging the relationships between data and between learning objectives. We study graph-based machine learning methods which are the common foundations of the research group and we rely on methods coming from statistical and computational learning theory, graph theory, representation learning, (distributed) optimization and statistics.

We are mainly interested in provable properties for machine learning algorithms but we also consider more empirical work. Our application domains cover health, mobility, social sciences, voice technologies.

Axes de recherche

Our research is organized along three main axes:

- Mining and learning in graphs: we study the trade-off between predictive accuracy, computational complexity and verification of ethical properties for graph-based learning algorithms.
- Machine Learning for Natural Language Processing: we study how to enhance NLP methods with graph-based learning algorithms and how to develop ethical learning algorithms in NLP. The objective is to go beyond vectorial classification to solve task like coreference resolution and entity linking, temporal structure prediction, and discourse parsing.
- Decentralized Machine Learning: we address the problem of learning in a private, fair and energy efficient way when users and data are naturally distributed in a network. From an algorithmic perspective, we study federated learning and fully decentralized learning and optimization. We also consider research on a global and holistic level, in complex pipelines that involve learning.

Relations industrielles et internationales

Contact

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En savoir plus

- Site de l'équipe
- Site sur inria.fr
- Site du responsable
- Derniers Rapports d'Activité : 2015 , 2016 , 2017 , 2018 , 2019 , 2020 , 2021 , 2022 , 2023

Documents sur la structure

- Intranet
- Privés

Décisions

- 11581 (25/04/2016) : création
- 14331 (30/07/2020) : prolongation
- 16994 (26/04/2024) : prolongation

Localisation

- **Adresse postale :** Centre Inria de l'Université de Lille Parc Scientifique de la Haute Borne 40, avenue Halley Bât.A, Park Plaza 59650 Villeneuve d'Ascq France
- **Coordonnées GPS :** 50.606, 3.149

- UCLA, UCL, Alan Turing Institute, MPI
- Lille Hospital, Université de Lille