

Thesis proposal: “Group awareness in the AI era: models and tools for maintaining team cohesion and preventing disengagement in teleworking teams”

Université Paris 1 Panthéon Sorbonne & Université de Reims Champagne-Ardenne

Keywords

Group awareness, Computer Supported Cooperative Work (CSCW), sentiment analysis, Artificial Intelligence, Machine Learning, Federated Learning.

Context

The proliferation of home officing and other teleworking practices has deeply transformed the way people collaborate in the workplace, leading to a proliferation of digital platforms (Teams, Zoom, Jira, etc.) and a scattering of information across such platforms. This evolution brings with it new challenges: loss of team cohesion, isolation, difficulty in tracking project progress, and increased risk of disengagement or psychological distress among employees.

Thesis goals

The thesis stands at the crossroads of two research fields: Computer Supported Cooperative Work (CSCW), and its notion of group awareness, and Artificial Intelligence, with its Machine Learning techniques. The thesis aims at:

- Proposing AI and Machine Learning models to extract, from multi-platform activity traces, relevant group awareness information;
- Detecting early signs of disengagement or distress among team members;
- Designing personalized group awareness information dissemination and alert mechanisms, respecting privacy (RGPD, AI Act), to reinforce team cohesion and well-being;
- Exploring Federated Learning and incremental learning approaches to adapt models to each collaborative context.

Candidate profile

- Master degree (MSC) on Computer Science, with particular skills on Data Science, AI and related fields.
- High proficiency in Machine Learning, data processing, and distributed systems.
- Interest in human and organizational issues related to collaborative work. Previous knowledge or experience in CSCW would be appreciated.
- Initiative, autonomy and ability to work in an interdisciplinary team.
- Good scientific communication skills (French and English).

Supervision & practical information

- **Supervisor:** Manuele Kirsch Pinheiro (Université Paris 1 Panthéon Sorbonne, CRI)
- **Co-supervisor:** Luiz Angelo Steffanel (Université de Reims Champagne-Ardenne, LICIIS - LRC CEA DIGIT)
- Starting at: **September 2025**
- Where: **Centre de Recherche en Informatique, Université Paris 1 Panthéon-Sorbonne, Centre Pierre Mendès-France (Paris 13^{ème})**

Application

Send CV, cover letter, master degree grades and thesis manuscript, together with two academic references to:

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