

**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, LICIS - LRC CEA DIGIT)
- Starting at: **September 2025**
- Where: **Centre de Recherche en Informatique, Université Paris 1 Panthéon-Sorbonne, Centre Pierre Mendès-France (Paris 13<sup>ème</sup>)**

### **Application**

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

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