

Chassot, Christophe; Datchary, Caroline; Grosjean, Sylvie; Lewkowicz, Myriam; Medjiah, Samir; Müller, Claudia. (2024): Data at the Workspace. Working with data: collecting, analyzing, and using traces of work activities. In: Proceedings of the 22nd European Conference on Computer-Supported Cooperative Work: The International Venue on Practice-centered Computing on the Design of Cooperation Technologies – Workshops proposals, Reports of the European Society for Socially Embedded Technologies (ISSN 2510-2591), DOI: 10.48340/ecscw2024_ws04

Data at the Workspace

Working with data: collecting, analyzing, and using traces of work activities

Christophe Chassot¹, Caroline Datchary², Sylvie Grosjean³,
Myriam Lewkowicz⁴, Samir Medjiah⁵, and Claudia Müller⁶.

¹ LAAS-CNRS, INSA Toulouse,

² LISST, Toulouse Jean Jaurès University,

³ University of Ottawa,

⁴ LIST3N/Tech-CICO, Troyes University of Technology,

⁵ LAAS-CNRS, Paul Sabatier University – Toulouse 3,

⁶ Siegen University

*chassot@laas.fr, caroline.datchary@univ-tlse2.fr, sgrosjea@uottawa.ca,
myriam.lewkowicz@utt.fr, medjiah@laas.fr, claudia.mueller@uni-siegen.de,*

Abstract. The digitization of work has expanded the possibility of collecting traces of activities, and AI techniques are now expanding the potential for analyzing this large amount of data. This phenomenon is mostly associated with forms of control and evaluation of worker's activities, thus generating forms of resistance. It is therefore important to think about ways of collecting and processing this data that could improve the quality of life at work, by tackling information, cognitive, or communication overload. Indeed, this data could be used to improve deliberation in organizations, by providing digital representations of the activity that is not easy to grasp in day-to-day professional work. The objective of this workshop is to gather researchers interested in discussing how data could be collected, analyzed, and discuss improving the quality of life at work: which data? Which methods for its collection and its analysis? Under which conditions?

Copyright 2024 held by Authors, DOI 10.48340/ecscw2024_ws04

Permission to make digital or hard copies of part or all of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Abstracting with credit is permitted. To copy otherwise, to republish, to post on servers, or to redistribute to lists, contact the Authors.

Author keywords

- Quality of life at work
- Information overload
- Cognitive strain
- Communication overload
- Digitization
- Traces of activities
- Data collection
- Data analysis
- User-centered computing
- Artificial Intelligence
- Deliberation in organizations
- Digital representations
- Data collection
- Data analysis methods
- Conditions for data utilization

Detailed proposal

The second edition of the VERTUOSE workshop builds upon the success of our 2023 gathering, titled “Collectively Improve the Quality of Life at Work: How and Which Data to Collect and Analyze?” In that 1st workshop, 11 researchers convened to explore data collection and processing methods aimed at enhancing work quality by addressing information overload, cognitive strain, and communication challenges (Fiore-Gartland, et al., 2015). We delved into various work contexts, including healthcare, shop floors, learning environments, and office settings. Beyond the immediate focus on work quality, we also engaged in broader discussions about data within the workspace.

For this year’s workshop, we retain our initial inquiry but expand its scope. In addition to improving working conditions, we now emphasize the efficiency of workers’ actions, all while respecting the collective agreements established by the relevant stakeholders. By efficiency, we refer to the optimal execution of tasks under favorable conditions.

Every work activity generates digital traces that can be recorded live (Burnett, J. R., et al., 2021) or collected retrospectively. The aim of this workshop is to question the methods by which this data is collected, analyzed, and used, whether by those involved in the workplace or by researchers (Flyverbom, et al. 2018). These questions will be raised from a particular angle. In practice, working with data is often associated with the issue of hierarchical control of work (Holten Møller, et al., 2021; Flügge et al., 2021; Levy, 2002). The aim here is to approach data processing for other purposes. Particular attention will be paid to studies that present other uses for the data collected, for example, in terms of improving working conditions (Mark, G. 2023) or developing democracy in the workplace (Kristiansen et al., 2018). We will be looking at the opportunities associated with computerized data collection, especially for organizational actors (managers, workers, trade unions) (Khovanskaya et al., 2020; Pedersen

& Bossen, 2024). It seems to us that thinking of alternative uses for control or surveillance is crucial for the design of labor data collection and analysis tools that promote organizational efficiency (Faraj, S., et al., 2018). This topic (data at the workplace) therefore raises many questions:

- How can we effectively collect data from work activities? What are the best practices for recording digital traces, whether in real-time or retrospectively?
- What methods can we use to analyze the collected data? How can AI and other analytical tools provide meaningful insights?
- How do we move beyond hierarchical control when working with data? Can data processing serve purposes beyond oversight, such as improving working conditions or promoting workplace democracy?
- What innovative applications exist for the data we collect? How can it contribute to worker well-being and decision-making?
- What advantages does automated data collection offer? How can organizational players (managers, employees, trade unions) leverage data for informed decision-making?
- How can organizations ensure responsible data collection and handling? What protocols should be in place to protect privacy and confidentiality?
- How do we address biases in data collection and analysis? What steps can we take to ensure fairness, especially when making decisions based on data insights?
- What processes should be followed to obtain informed consent from employees regarding data collection? How can transparency build trust?
- Who owns the data generated in the workplace? How can we balance organizational needs with individual rights?
- What are the potential long-term consequences of data utilization? How can we mitigate negative effects?
- How do different stakeholders (employees, management, customers) perceive data usage? How can we align their interests ethically?

Description of themes:

To address the questions posed, we invite contributions on the following themes, while recognizing that this list is not exhaustive:

- **Empirical Studies on Data Collection:** How do different forms of data collection impact work environments? What insights can empirical studies provide regarding data gathering practices?
- **Metrics and Workplace Dynamics:** What role do metrics play in shaping work experiences? How can we strike a balance between measurement and employee well-being?

- **Debates and Norm Formation:** How do debates around data collection influence the collective formation of norms? What tensions arise, and how can they be resolved?
- **Navigating Resistance and Workarounds:** When faced with data-related challenges, how do individuals and teams respond? What creative workarounds emerge, and what can we learn from them?
- **Methodological Innovations:** What novel methodologies can enhance data collection and analysis at work? How can we address methodological challenges effectively?
- **Conceptualizing Agency and Trust:** How do different forms of agency and trust intersect with data practices? What ethical considerations arise when individuals interact with data systems?
- **Participatory Software Design:** How can software and AI systems be designed collaboratively to collect, analyze, and visualize data? What role does participatory design play in shaping usage norms?
- **Implementing Ethical Infrastructure:** What IT systems and algorithms are needed to ensure responsible data utilization? How can we program infrastructure that aligns with ethical principles?

Regardless of the type of work context, these themes offer valuable insights. We particularly welcome reflections and testimonies—both positive and negative—on data collection for workplace democracy and the enhancement of working conditions.

Activities

Maximum number of participants : **15**

Length of the workshop: **1 day**

The workshop is planned as a full day event divided into two sessions and will include additional online activities organized prior to the workshop. The contributions will be made available on the workshop website in order to prepare the attendees for the discussions at the workshop. In addition to the themes highlighted here by the workshop organizers, other themes for the workshop that emerge from the position papers will be posted on the website. Participants will be invited to reflect on these themes. Depending on the scope and focus of the contributions, we will consider proposing some guiding questions.

The first half of the workshop would be devoted to brief presentations of participants' research. In order to stimulate the exchanges, each selected proposal will be assigned to a discussant who will give a short summary of the short paper's main topic and its contribution to the workshop, talk about the submitted short paper and raise questions to the author(s) during the workshop. The author(s) will be able to answer the questions by sharing empirical material or results, by explaining conceptual framework or by developing methodological choices. The second half of the workshop will consist of the collective development of a synthesis upon identified themes with a review of the literature. The group would be first divided and then gathered for a final restitution.

Equipment needed:

- Projector
- Paper board, ideally with markers and post-it notes.

Means of recruiting and selecting participants

Participants will be recruited through:

- EUSSET mailing list
- CSCW mailing list
- Announcements on social networks
- International Communication Association mailing list
- International Sociological Association mailing list
- Professional network of the organizers

We will use the workshop website which was created last year, and we will update it until the closing of the workshop. Participants will be selected based on their position paper submissions (up to 4 pages in length using the ECSCW Exploratory paper format). The selection will be made by the workshop's organizers based on their interest, compliance with the workshop themes, and the extent (and diversity) of their backgrounds.

Goals

The first workshop brought together researchers interested in these topics, we wish to strengthen these links and broaden the community.

Depending on the outcome of the workshop's discussions and on the interest of the participants, we may explore further publication outlets for the workshop papers. We were thinking of a special issue of the CSCW Journal about collecting data in the workplace.

Background of the organizers

- **Christophe Chassot** is full professor in computer science and networks at the INSA Toulouse (France), where he is director of research and development. His research activities focus on next-generation communication networks and systems, and their applications. His contributions deal with dynamic and autonomous reconfiguration of new communication architectures taking advantage of recent opportunities in network softwarization and virtualization.
- **Caroline Datchary** is full professor of sociology at Toulouse Jean Jaurès University (France) where she is deputy director of the LISST research laboratory. She is interested in situations of dispersion at work with a view to improving working conditions. Her research fields concern various work situations and combine different methodological approaches.
- **Sylvie Grosjean (Ph.D.)** is full professor at the University of Ottawa and the chair of the Com&Tech Innovations Lab (<http://ctilab.ca>). Her current research interests include the design and implementation of telehealth innovations as well organizational communication by studying the role of technologies (e.g. Medical Information

Systems, telemedicine technologies) on care coordination and clinical decision-making. She develops a codesign approach in health and uses various qualitative methods to analyze human/machine interactions (e.g. video-ethnography).

- **Myriam Lewkowicz** is Professor at Troyes University of Technology where she heads the pluridisciplinary research group Tech-CICO and the master program. She is interested in defining digital technologies to support existing collective practices or to design new collective activities. This interdisciplinary research proposes reflections and approaches for the analysis and the design of new products and services to support cooperative work. The main application domains for this research for the last fifteen years have been healthcare (social support, coordination, telemedicine) and industry (digital transformation, maintenance). She is a member of the program committees of the main conferences in Cooperative Work, Social Software, and Human-Machine Interaction, chairs the European scientific association EUSSET, and is deputy editor-in-chief of the CSCW journal, « The Journal of Collaborative Computing and Work Practices ».
- **Samir Medjiah** is associate professor in computer systems and networks at Paul Sabatier University - Toulouse III (France) and a researcher in LAAS-CNRS. His main research interests include overlay networks optimization, network virtualization, and software defined networking. He has worked on various R&D projects related to application-driven networking and Network-Application co-optimization.
- **Claudia Müller**: is a Professor of Socio-Informatics, specializing in “IT for the ageing society” at the University of Siegen, Germany. Her expertise is PD with and for older adults, vulnerable user groups and local communities. She is representative chairwoman of the commission of the Eighth Federal Government Report on Older People.

References

- Burnett, J. R., & Lisk, T. C. (2021). The future of employee engagement: Real-time monitoring and digital tools for engaging a workforce. In *International Perspectives on Employee Engagement* (pp. 117-128). Routledge.
- Faraj, S., Pachidi, S., & Sayegh, K. (2018). Working and organizing in the age of the learning algorithm. *Information and Organization*, 28 (1), 62–70.
- Fiore-Gartland, B., & Neff, G. (2015). Communication, mediation, and the expectations of data: Data valences across health and wellness communities. *International Journal of Communication*, 9, p. 19.
- Flyverbom, M., & Murray, J. (2018). Datastructuring—Organizing and curating digital traces into action. *Big Data & Society*, 5(2), 2053951718799114.
- Flügge, A. A., Hildebrandt, T., & Møller, N. H. (2021). Street-level algorithms and AI in bureaucratic decision-making: A caseworker perspective. *Proceedings of the ACM on Human-Computer Interaction*, 5(CSCW1), 1-23.
- Holten Møller, N., Neff, G., Simonsen, J. G., Villumsen, J. C., & Bjørn, P. (2021). Can workplace tracking ever empower? Collective sensemaking for the responsible use of sensor data at work. *Proceedings of the ACM on human-computer interaction*, 5(GROUP), 1-21.
- Khovanskaya, V., Sengers, P., & Dombrowski, L. (2020). Bottom-Up Organizing with Tools from On High: Understanding the Data Practices of Labor Organizers. In *Proceedings of the*

2020 CHI Conference on Human Factors in Computing Systems (CHI '20). Association for Computing Machinery, New York, NY, USA, 1–13. <https://doi.org/10.1145/3313831.3376185>

- Kristiansen, K. H., Valeur-Meller, M. A., Dombrowski, L., & Holten Moller, N. L. (2018, April). Accountability in the blue-collar data-driven workplace. In Proceedings of the 2018 CHI conference on human factors in computing systems (pp. 1-12).
- Levy, K. (2022). Data driven: truckers, technology, and the new workplace surveillance: Princeton University Press.
- Mark, G. (2023). Attention Span. A Groundbreaking Way to Restore Balance, Happiness and Productivity: Harper Collins Publishers.
- Pedersen, A.M., & Bossen, C. (2024). Cultivating Data Practices Across Boundaries: How Organizations Become Data-driven. Comput Supported Coop Work (2024). <https://doi.org/10.1007/s10606-024-09489-8>.