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International Labour Organization

Global Conference on Measuring New Forms of Employment

Brussels, 4 - 5 July 2024

#MeasuringEmployment

END OF THE ERA OF (HUMAN) MANAGERS?
Future of algorithmic management

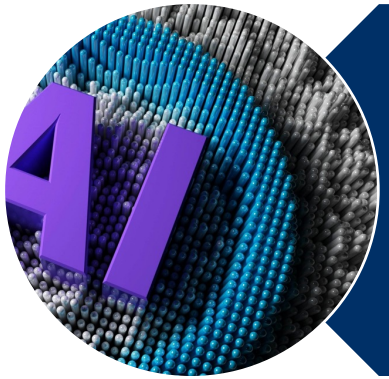
Session 3 – "Edge-of-the-knowledge"

Łukasz Sienkiewicz
Gdańsk University of Technology

END OF THE ERA OF (HUMAN) MANAGERS?

Future of algorithmic management

Generative AI & algorithmic management



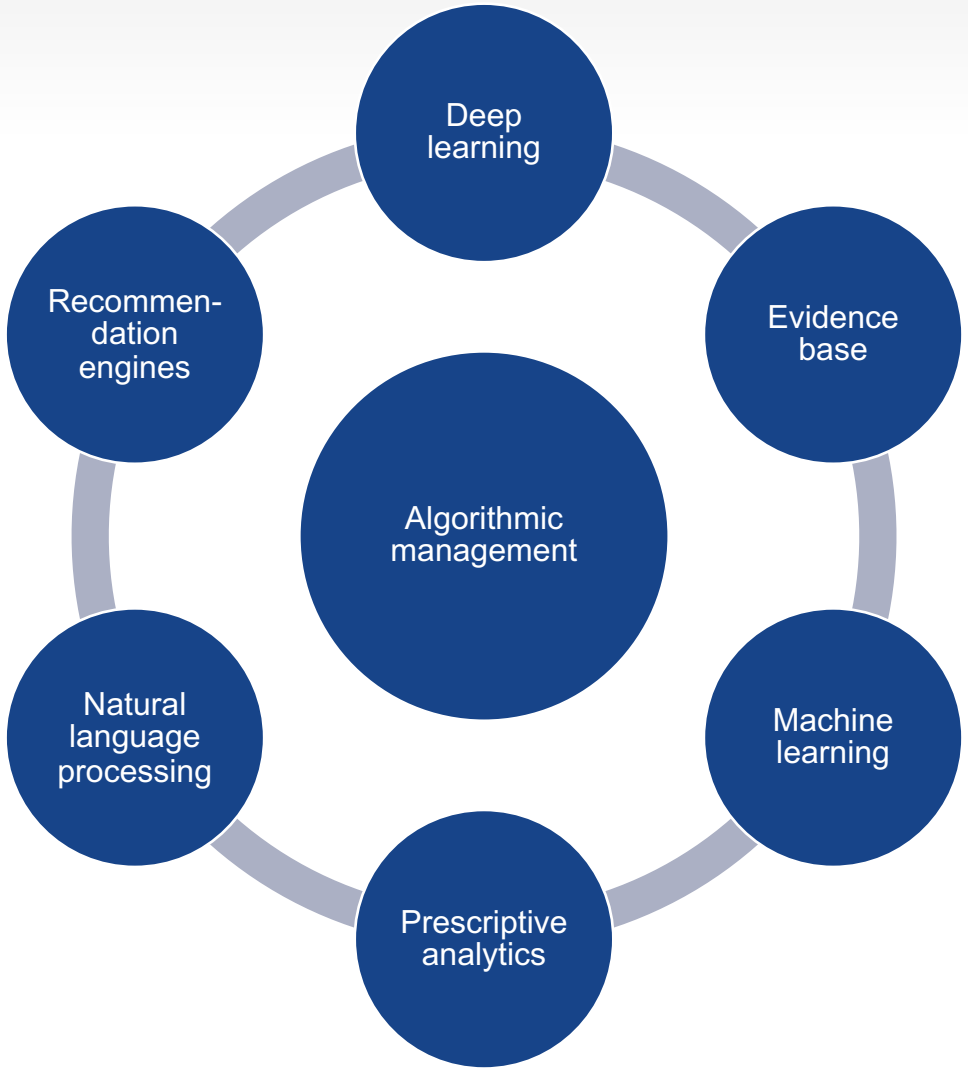
Generative AI is an umbrella term and describes a technology that is designed to simulate human cognitive abilities across a wide array of intellectual tasks by learning from a vast amount of data (Dwivedi et al., 2023)

Algorithmic management is a control system in which self-learning algorithms are entrusted with the responsibility for making and executing decisions affecting work, thus limiting human involvement and supervision over the work process (Duggan et al., 2020) .

Generative AI & algorithmic management

AI is a „family of families” of technologies.

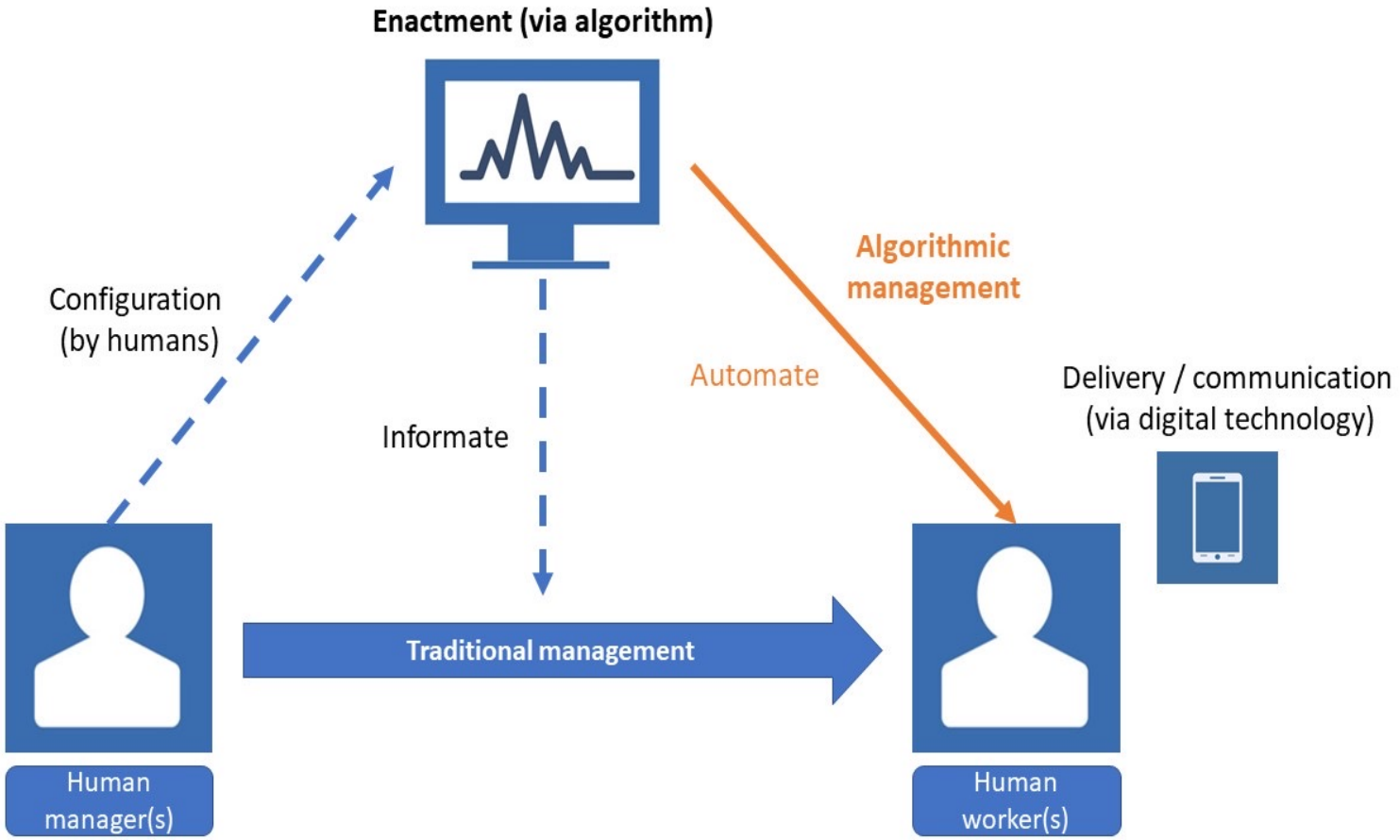
Also **algorithmic management** is based on number of AI and data science technologies, making it a nuanced technology.



Principles of algorithmic management

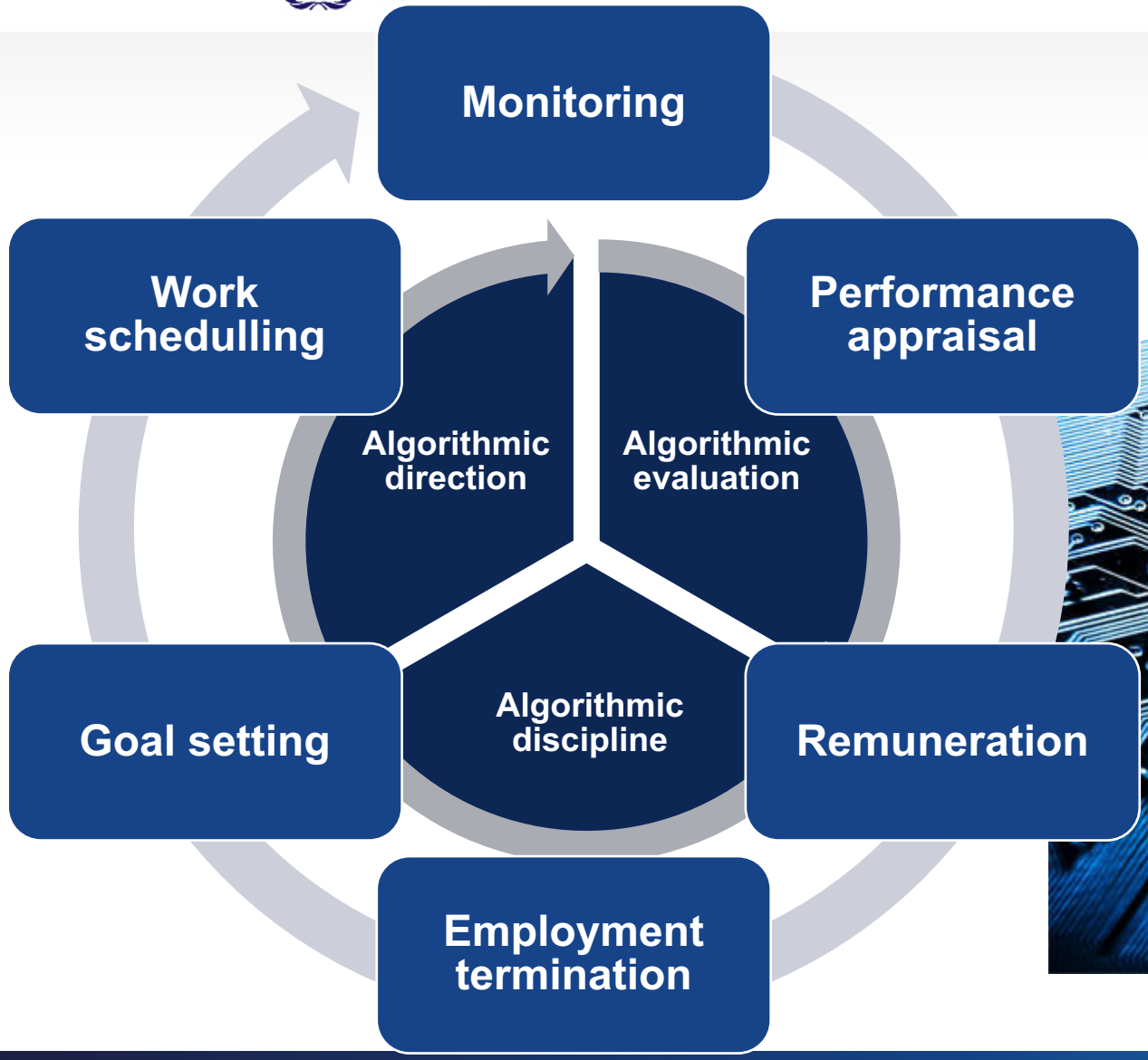
Not all data- or AI-supported actions can be considered algorithmic management!

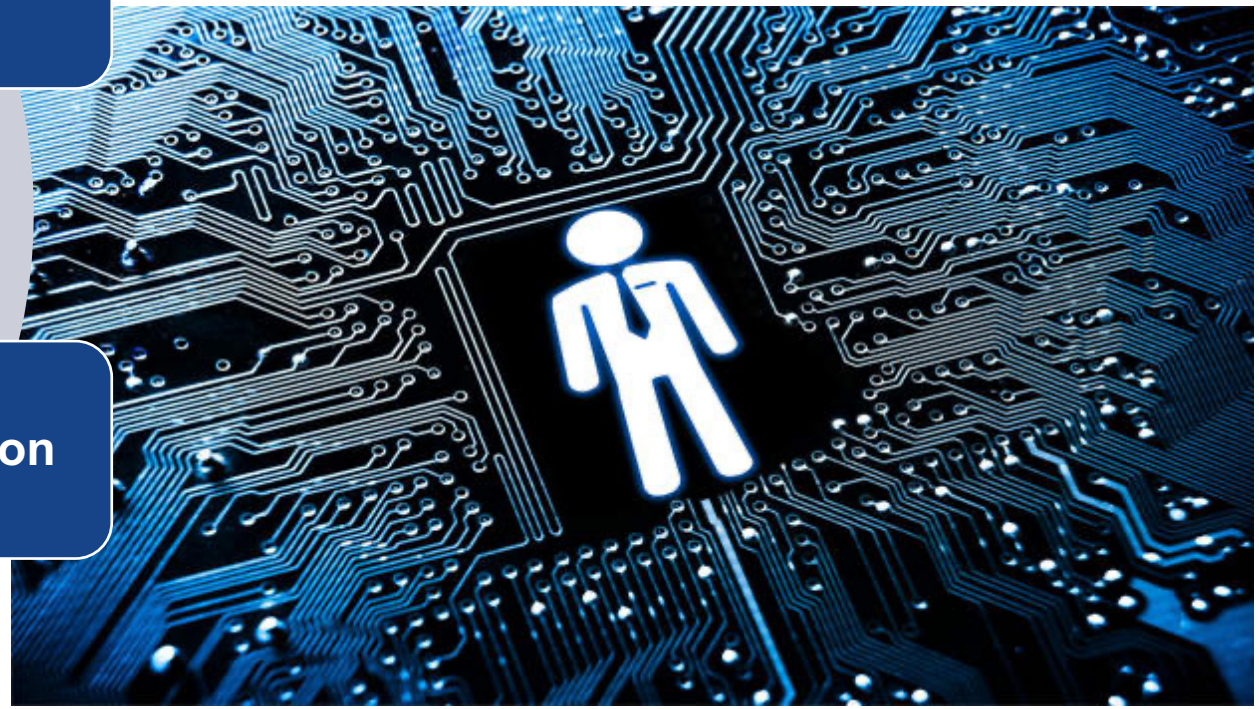
The defining factor is the level of decision automation.



Source: adapted from Wiener et al. 2021

What algorithmic „managers" actually do?





HRM process	HRM algorithm type		
	Descriptive algorithms	Predictive algorithms	Prescriptive algorithms
Selection	Assessment of job candidates personality traits on basis of their social media profiles	Predicting job candidates potential and performance	Automated resume screening; automated suggestions which job candidate to invite for job interview
Training	Automated web-search of available training programs; evaluation of training effectiveness	Predicting the need for upskilling; prediction of workforce competence gap	Automated instructions to poor performing workers
Appraisal	Sentiment analysis; aggregation and computing performance scores	Predicting when projects go off track; predicting future worker performance	Alerting managers to take corrective actions; Automated sanctioning (e.g. deactivation) of poor performing workers
Compensation and benefits	Automated salary surveying; job ranking	Predicting desired compensation level	Surge pricing; automated variable pay; priority access to work assignments
Workforce planning	Construction of competency profiles; employee inventory	Turnover prediction; predicting future labour demand	Automated staff rostering; automated staff allocation

Source: Meijerink & Bondarouk, 2023.

Benefits and challenges of algorithmic management

Lower costs

Time savings

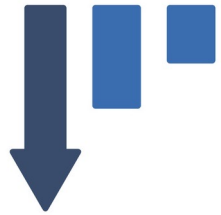
Productivity gains

Diminishing human bias

Increasing (procedural and distributive) fairness

Increasing consistency of decisions

Increasing objectivity



Algorithm bias (unfairness, stereotyping, discrimination)

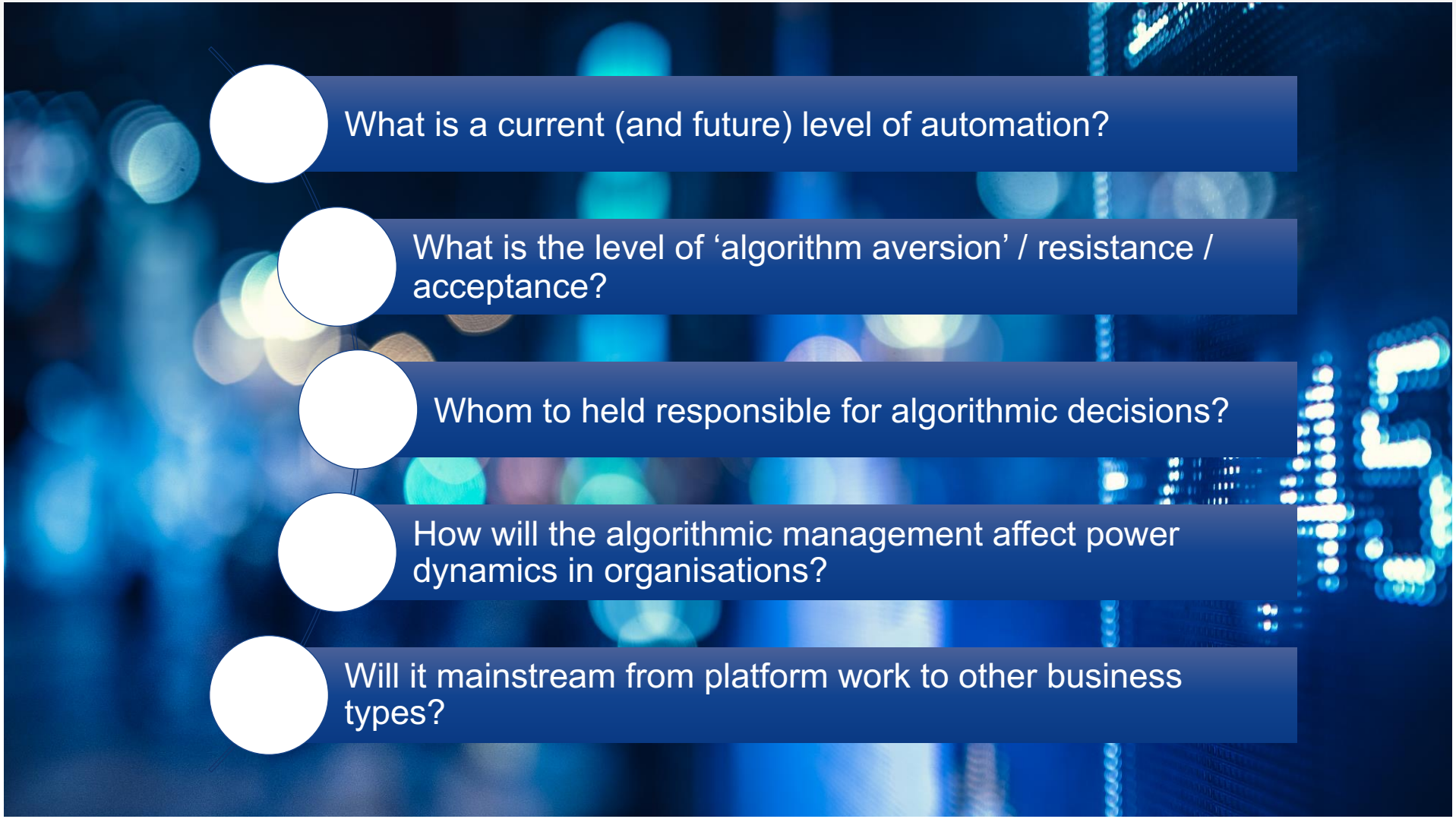
Lack of (or limited) contextual information

Inadequate data (input data – inaccurate, unrepresentative, biased)

Lack of transparency (black box)

Acceptance of algorithmic HR decisions

Ethical considerations


What is a current (and future) level of automation?
What is the level of ‘algorithm aversion’ / resistance / acceptance?
Whom to held responsible for algorithmic decisions?
How will the algorithmic management affect power dynamics in organisations?
Will it mainstream from platform work to other business types?

Other under-researched topics

- “Tech paradox” – if we outsource functions to tech we gradually lose ability to do it ourselves. What will be the scale of trade-off in managerial skills?
- “Youtubification” of management – will people question the source/ credibility of information?
- “External effects” - what will the negative effect be for workers (distrust, unethical/ counterproductive behaviours, work autonomy, job satisfaction, well-being, technostress, etc.)?

Łukasz Sienkiewicz

Gdańsk University of Technology

Associate Professor

lukasz.Sienkiewicz@zie.pg.edu.pl

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Thank you

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