

## **Building a datafication framework: A case study in measuring customer experiences in facility management, using Action Design Research**

The example of Predictive Policing, described by O'Neil in her book *Weapons of Math Destruction*, illustrates how data reflect historic biases, are used to 'teach' algorithms to be racist, and data-driven interventions repeat historic patterns and shape the world into the assumptions behind the data and algorithms. A typical response to such cases is to try and 'de-bias' the data. However, the term 'biased data' implies that they deviate from a supposed objective and neutral starting point. Instead, the term 'datafication' signifies (1) that data are designed and come from specific perspectives and assumptions, and (2) that data mediate and shape the practices in which they are used. This paper presents a framework that deconstructs datafication into five phases:

1) Domain Model / select variables: how is the domain imagined as data, using which perspectives, assumptions and theories? 2) Data Model / generate data: how is the domain model operationalized into actual measures and classifications, and what are practical constraints on what can be measured? 3) Statistical Model / analyze data: are the mathematics and error rates appropriate for the domain? 4) Mediated intervention: data outputs present a 'picture' of the domain, making new things visible and directing interventions. 5) Emerging practice: interventions are a source of new data, further feeding the algorithm and creating feedback loops.

The datafication framework is a tool for professionals to reflect on the datafication of a practice, and helps trace sources of 'bias' in a data project.