

The background is a complex, abstract digital composition. It features a dense field of thin, glowing lines in shades of blue, cyan, and orange, which appear to be flowing and curving across the frame. Interspersed among these lines are numerous small, bright particles and larger, soft-edged bokeh-like shapes, creating a sense of depth and movement. The overall color palette is dominated by cool blues and teals, with warm orange and red accents that provide contrast and energy. The lighting is dynamic, with brighter areas where the lines and particles are more concentrated, and darker, more shadowed regions elsewhere, giving the impression of a vast, active digital space or data stream.

Predictive analytics and the future of law and regulation

Michael Dizon



Data analytics and AI for regulation

- Benefits
 - Improved efficiency
 - Reduced costs
 - Greater responsiveness
 - Enhanced safety and security

A man with a beard and grey hair is shown in profile, looking intently at a computer monitor. The monitor displays a complex financial chart with multiple lines and bars in various colors (yellow, red, blue). The man is holding a pen in his right hand, suggesting he is analyzing or working on the data. The background is dark, with some blurred lights, possibly from a city at night.

Controversial uses

- Criminal sentencing
- Health and welfare fraud detection (Robodebt)
- Child abuse and neglect monitoring (false positives)
- Predictive policing

Types of algorithms and rules and their interactions

- Descriptive (**is**)
- Predictive (might or **will be**)
- Prescriptive (**ought**)
- Normative (**ought or else**)

Technical viewpoint

- Types of data analytics
 - Descriptive (What is?)
 - Diagnostic (Why it is?)
 - Predictive (What might or will be?)
 - Prescriptive (What should be?)
- Logical, chronological and linear

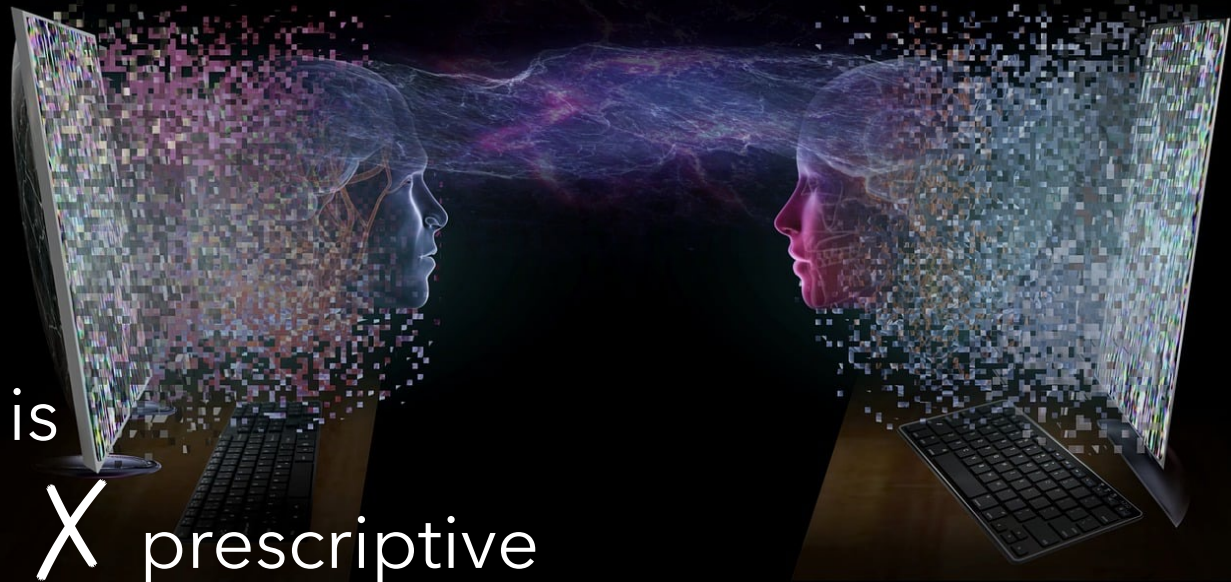


Legal and policy perspective

- Relations and interactions are not neat or simple
- 3 major concerns or critiques



- Is-ought problem (David Hume)
- No ought from is
- Descriptive (is) \times prescriptive (ought)
- Either
 - Cannot use predictive analytics for regulation
 - Transparency about explicit or implicit goals and values (oughts)



1
Hume's
law

- 'the number of transistors on an integrated circuit will double every two years with minimal rise in cost' (Gordon Moore)

- Descriptive, predictive and prescriptive rule **all-in-one**
- Blurred distinction and overlapping
- Self-fulfilling prophecy (human element)

2 Moore's law



- Norm or social norm – ‘generally accepted, sanctioned prescriptions for, or prohibitions against, others’ behaviour..., i.e. what others *ought* to do ... or *else*’ (Richard Morris)
- ‘Or else’ – involves sanctions or inducements of some kind

3

**Normative
rules**

3

Normative rules

- Law as more formal norms
- Prescriptive (ought) \neq Normative (ought or else)



Normative rules - driving

- Speeding is the top cause of car accidents (descriptive)
- Driving faster will increase the risk and probability of accidents (predictive)



Normative rules - driving

- You should not drive over the speed limit to prevent accidents (prescriptive)
- You should not drive over the speed limit because (normative)
 - It is not socially acceptable behaviour or
 - You will be fined or penalised



Summary

- Use of data analytics and AI in regulation poses significant challenges and concerns
- Understand different types of algorithms and rules and their interactions
- Be mindful of underlying interests and values, human element or agency, and significance of normative rules





End



Image credits

Slide 1 pixabay.com/illustrations/ai-generated-robot-machine-learning-8587587/ . Slide 2
pixabay.com/illustrations/ai-generated-robot-data-artificial-8587591/ . Slide 3
pixabay.com/illustrations/business-entrepreneur-man-data-8398064/ . Slide 4
pixabay.com/illustrations/ai-generated-digital-lines-9110647/ . Slide 5
pixabay.com/illustrations/ai-generated-man-personal-data-8163597/ . Slide 6
pixabay.com/illustrations/ai-generated-big-data-data-8540917/ . Slide 7
pixabay.com/illustrations/brain-mind-humanoid-android-7396544/ . Slide 8
pixabay.com/illustrations/technology-digital-internet-8433065/ . Slide 9
pixabay.com/illustrations/ai-generated-technology-digital-8782741/ . Slide 10
pixabay.com/illustrations/ai-generated-hand-computer-9123239/ . Slide 11
pixabay.com/photos/car-dashboard-speedometer-speed-2667434/ . Slide 12
pixabay.com/illustrations/ai-generated-data-scientific-8741372/ . Slide 13
pixabay.com/illustrations/ai-generated-big-data-data-8540921/ . Slide 14
pixabay.com/illustrations/ai-generated-technology-digital-9105745/