Faculty of Law, Economics and Finance

CRIM_AI

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Unpacking AI Evidence and (Re-)Defining Procedural Safeguards in Digital Investigations

CRIM_AI Research

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- Shift from human-centric investigation to data analysis due to
  - expansion of AI systems in investigation and prosecution of crime;
  - omnipresence of AI devices in daily lives of humans.

- CRIM_AI seek to address whether:

  "existing rules on criminal procedure, in particular evidence law and procedural guarantees, are sufficient to address the specific nature and the associated pitfalls of AI evidence?"

- Taking into account
  - the primary role of national courts in building proof and their capacity of judicial interpretation;
  - the potential of data protection principles to fend off the negative effects of AI Evidence's opacity and inaccuracy in criminal proceedings;
  - function creeps;
  - the role of the private sector.

Outline

- Definition and typology of AI Evidence
- Impact of AI Evidence on criminal proceedings
- Responses of national courts to challenges posed by AI Evidence
- New procedural guarantees

1.
AI Evidence:
Definition and Typology

AI Evidence

- AI Evidence means the use of AI’s output to establish the guilt or innocence of someone accused of a crime where the AI system generated the output
  - **autonomously**
  - **by using machine learning**.

- Autonomous working of AI is key element of the definition
  - **lack of human control** in processing or generating such evidence;
  - some form of machine learning is required; i.e. rule based systems are excluded (limitation on the technology considered), but foundational models of Generative AI are considered.

AI Evidence

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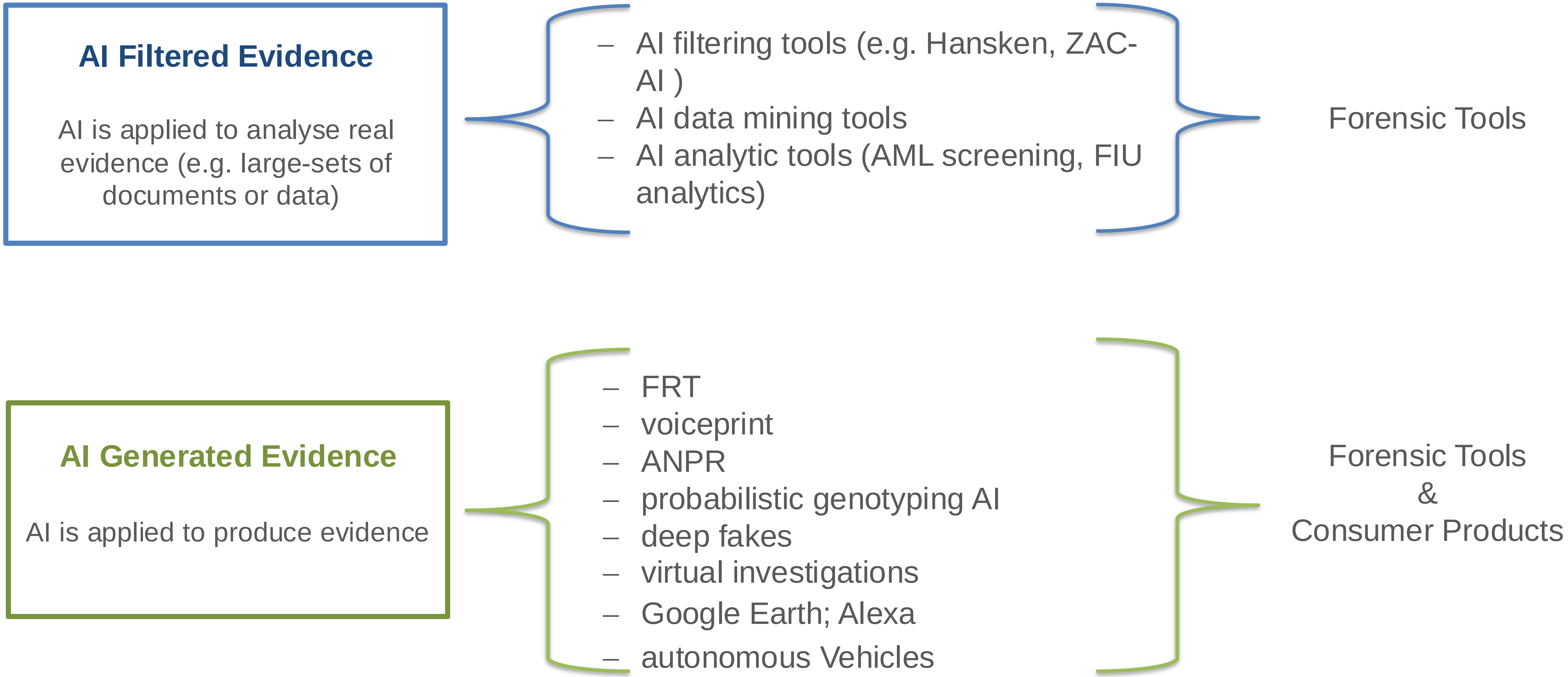

AI Filtered Evidence

AI is applied to analyse real evidence (e.g. large-sets of documents or data)

- AI filtering tools (e.g. Hansken, ZAC-AI)
- AI data mining tools
- AI analytic tools (AML screening, FIU analytics)

Forensic Tools

AI Generated Evidence

AI is applied to produce evidence

- FRT
- voiceprint
- ANPR
- probabilistic genotyping AI
- deep fakes
- virtual investigations
- Google Earth; Alexa
- autonomous Vehicles

Forensic Tools
&
Consumer Products

2.
Impact of AI Evidence

Inmpact of AI Evidence on the Proceedings

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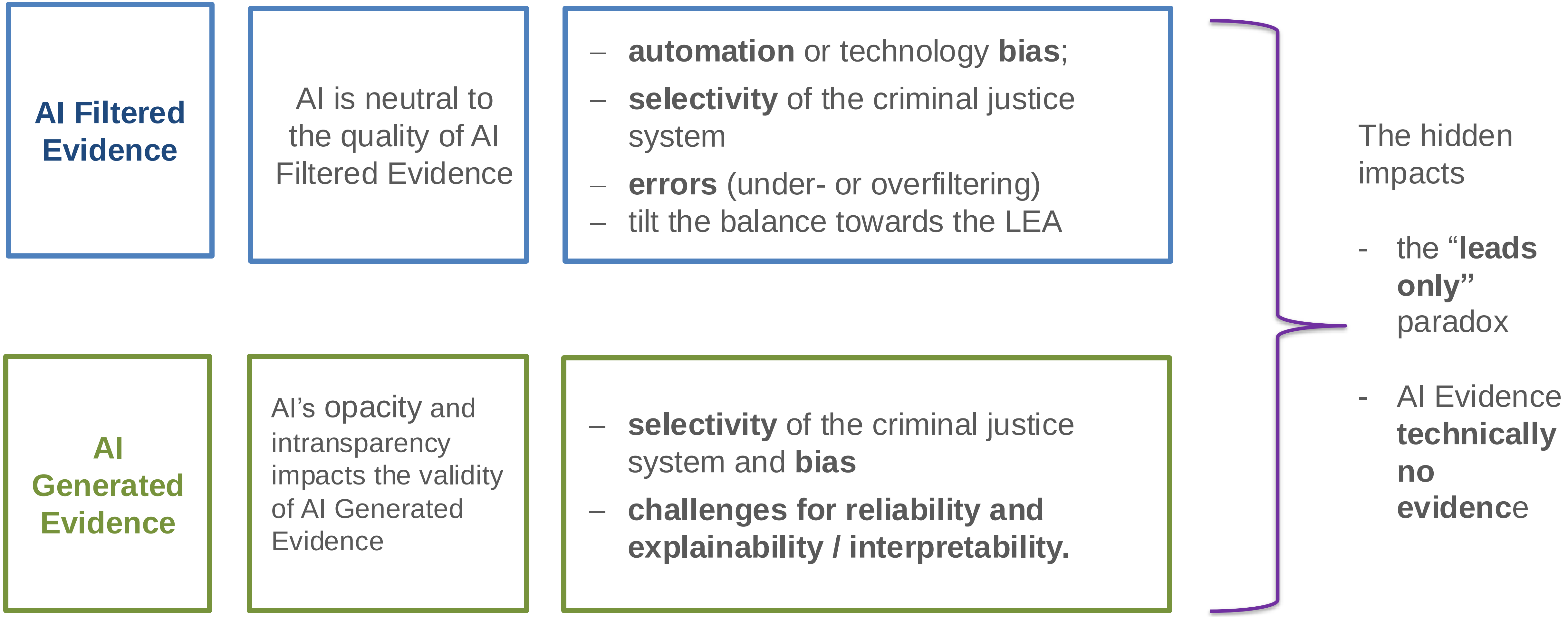

AI Filtered Evidence

AI is neutral to the quality of AI Filtered Evidence

- **automation** or technology **bias**;
- **selectivity** of the criminal justice system
- **errors** (under- or overfiltering)
- tilt the balance towards the LEA

AI Generated Evidence

AI's opacity and intransparency impacts the validity of AI Generated Evidence

- **selectivity** of the criminal justice system and **bias**
- **challenges for reliability and explainability / interpretability.**

The hidden impacts

- the "**leads only**" paradox
- AI Evidence **technically no evidence**

3.

National Courts Responding to the Challenges of AI Evidence

Admissibility of AI Evidence

- **Divergent national rules on admissibility** and exlcusion of evidence:
  - NL, FR, DE follow the inquisitorial tradition and place a lot of importance on how the evidence was obtained (i.e. regulating investigative measures) and contain less detailed rules on admission, presentation and evaluation of evidence;
  - UK & US follow the adversarial tradition and have detailed rules on admissibility; the judge has a gate-keeper role ensuring that the trier of the fact sees only admissible evidence.

- **General tendecy to admit** AI Evidence without too-detailed scrutiny as to validity, reliability, or credibility
  - criminal justice systems lack standardized tests for forensic evidence;
  - determinations on reliability and authenticity require quite a bit of specialized fact-finding in the case of AI Evidence.

Disclosure of AI Evidence

- The prosecutor is obliged to disclose both inculpatory and exculpatory evidence to the defense including if the evidence contains forensic reports.

- **Fair trial requires that the prosecutor, judge, jury, and affected parties know that AI Evidence** is part of the evidence.

- National approaches vary whether information on AI Evidence is provided in the case file
  - UK requires indication if parts of the evidence were computer-generated or assisted;
  - NL reports introducing complex forensic evidence must indicate whether the evidence contains original or processed data;
  - US no requirement regarding disclosure of the use of AI Evidence;
  - the file may not contain information on the use of AI because it generated only leads.

Scrutinizing AI Evidence by the Defense

- To challenge the admissibility the defense needs to demonstrate that the AI output is
  - either not valid and/or not reliable;
  - and/or it has not been correctly applied in the case of the defendant.
- To verify the reliability of AI Evidence, the defense needs both **opportunity** and **means** to do so.
- **Courts often deny defense requests** to access the information required for an independent validation on grounds
  - of trade secrets of the proprietary AI (US);
  - that such discovery is not necessary for disposing fairly of the action (NL, UK) or
  - that it will incur unnecessary costs (UK).
- **Defense often lacks means** to pay for forensic experts

From “Blind” Trust to Real Scrutiny

- (European) Courts in increasingly take a protective stance:
  - AI Evidence needs to be supported by other proof
  - dominance of human judgement
  - novel approaches to recognise (new) defence rights

- European frameworks offer new guarantees
  - transparency
  - right to explanation

New Procedural Guarantees?

- Right to information on the AI tool
- Right to access to the full collection of data
- Right to access the AI tool
- Right to explanation of forensic methods and results
- Right to have digital forensic assistance

Conclusion

Thank you very much for your attention!