**FACULDADE DE DIREITO**
Universidade de Lisboa

# INTENSIVE POSTGRADUATE PROGRAM
# AI IN LEGAL PRACTICE AND ITS REGULATION

Curricular unit

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| AI for Judges and Arbitrators – Module C |

Responsible Academic staff and respective workload in the curricular unit (enter full name)

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| Giulia Lasagni and Marcello Di Bello (2nd week) |

Syllabus

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| This module examines how tools from AI can help judges make decisions. Judges make decisions at several junctures of the justice system, pre- and post-trial. Their decisions concern matters of fact as well as matters of law. We will focus on decisions about matters of fact and examine three topics:<br>1. Machine learning tools for risk assessment, for example, risk assessment tools that help judges decide about bail and preventive detention for defendants awaiting trial;<br>2. AI multiagent systems for making decisions about the relevance and admissibility of evidence; and<br>3. Argumentation structures and Bayesian networks for representing complex, sometimes conflicting, evidence.<br>Transversal to these topics, the module will also examine the different ways in which the judiciary can rely on findings about matters of fact that are entirely or partially based on automated elements, as well as the adequacy of the current legislative policies and case-law on the topic. |

Teaching methodologies (including evaluation)

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| By seminars and tutorials; evaluation by project/essay |

Main Bibliography

Topic 1:
- Loomis v. Wisconsin: Brief amicus curiae of United States
  https://www.scotusblog.com/wp-content/uploads/2017/05/16-6387-CVSG-Loomis-AC-Pet.pdf
- PSA Scoring Manual: 2022 Edition (available at:
  https://advancingpretrial.org/improving-pretrial-justice/appr-resources/psa-scoring-manual-2022-edition/)
- Practitioner's Guide to COMPAS Core, 2019 (available at
  https://www.equivant.com/practitioners-guide-to-compas-core/)
- Serena Quattrocolo, Artificial intelligence, computational modelling and criminal proceedings. A framework for a European legal discussion, Springer, 2020

Topics 2:
- Hoelz BWP, Ghedini Ralha C, Geeverghese R (2009) Artificial intelligence applied to computer forensics. In: Proceedings of the 2009 ACM symposium on applied computing, pp 883–888
  https://dl.acm.org/doi/abs/10.1145/1529282.1529471
- Michael Wooldridge, An introduction to multiagent systems, 2nd edn. Wiley, 2009, select chapters
- Giulia Lasagni, AI-Powered Investigations: From Data Analysis to an Automated Approach Toward Investigative Uncertainty, in L Bachmaier Winter and S Ruggeri (eds), Investigating and Preventing Crime in the Digital Era. New Safeguards, New Rights, Springer, 2022 https://link.springer.com/book/9783031139512

Topic 3:
- Rafal Urbaniak and Marcello Di Bello, Legal Probabilism, Stanford Encyclopedia of Philosophy
  https://plato.stanford.edu/entries/legal-probabilism/
- Norman Fenton, Martin Neil, Barbaros Yet, David Lagnado, Analyzing the Simonshaven Case Using Bayesian Networks https://pubmed.ncbi.nlm.nih.gov/30861325/
- Marcello Di Bello, A probabilistic analysis of cross-examination using Bayesian networks
  https://onlinelibrary.wiley.com/doi/10.1111/phis.12209
- David Lagnado, Explaining the Evidence, Cambridge University Press, 2021, select chapters