AI IMPACT ON IP LAW AND PRACTICE
人工智能对知识产权法律及实践的影响

Associate Professor Frantzeska Papadopoulou
Frantzeska Papadopoulou 副教授

Stockholm University
斯德哥尔摩大学

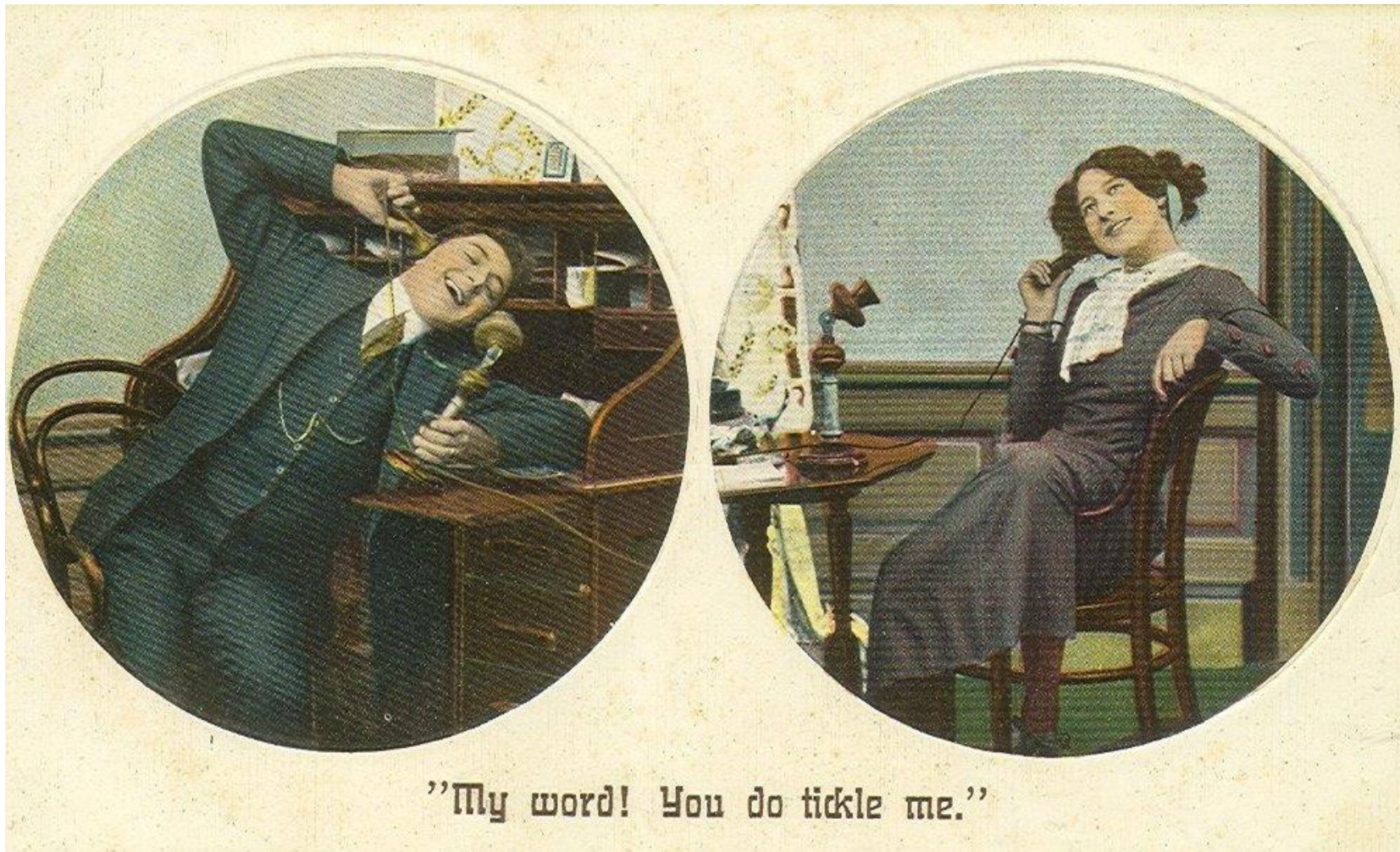# AI; is it really an issue for lawyers?
人工智能：是否真的跟律师有关?

- It changes the way people make business – and it is a hot business itself
- 人工智能改变了商业，而且其本身也是热门的商业方向
- AI raises a number of legal concerns
- 人工智能也产生了多个法律关切点
- It also changes/will change the way lawyers work
- 人工智能还改变了／将改变律师的工作方式

TECHNOLOGY
技术

"My word! You do tickle me."

AI; a historical perspective
人工智能；历史视角

1997 IBM supercomputer Deep Blue (beats chess master Garry Kasparov)

1997年，IBM 超级计算机"深蓝"（打败国际象棋大师加里·卡斯帕罗夫）

2002 First household robot introduced (vacuum cleaner called Rumba)

2002年，第一台家用机器人（"伦巴"真空吸尘器）

2008   Google introduces speech recognition

2008年，谷歌引入语音识别技术

2010Microsoft Xbox launches Kinect tracking human body movement in their video game devices

2010年，微软Xbox在游戏设备中上线Kinect体感跟踪功能

2011 Apple releases Siri. IBM Watson computer beats champions of TV game show Jeopardy

2011年，苹果发布Siri；IBM"沃森"打败智力问答竞赛节目《危险边缘》冠军

2012 Autonomous vehicles, access to big data etc

2012年，自动驾驶汽车、大数据访问等

THE MARKET
市场

The market and value 市场与价值

- 340.000 patented inventions since 2013 (WIPO)
- 根据世界知识产权组织统计，人工智能相关发明专利自2013年以来已注册340,000项
- Gartner: business value created by AI will reach $3-9 trillion by 2022
- 根据高德纳数据，到2022年，人工智能创造的商业价值将达到3~9万亿美元
- Extensive collaboration between private sector and universities and the race to be first between innovation groups
- 校企合作广泛，竞争首创
- A number of industries doing business in another way, an interesting example: the art market
- 一些行业实践新模式。值得一提的案例：艺术市场

An example: the art market 举例：艺术市场

Chronicled: Blockhain tech and AI in order to adress the issue of counterfeiting in art by placing a microchip – when scanned it will give the authorship, chain of owners etc

时序记录：使用区块链和人工智能技术，解决艺术品仿冒问题。置入微芯片，扫描后可显示艺术品作者、所有人历史记录等信息。
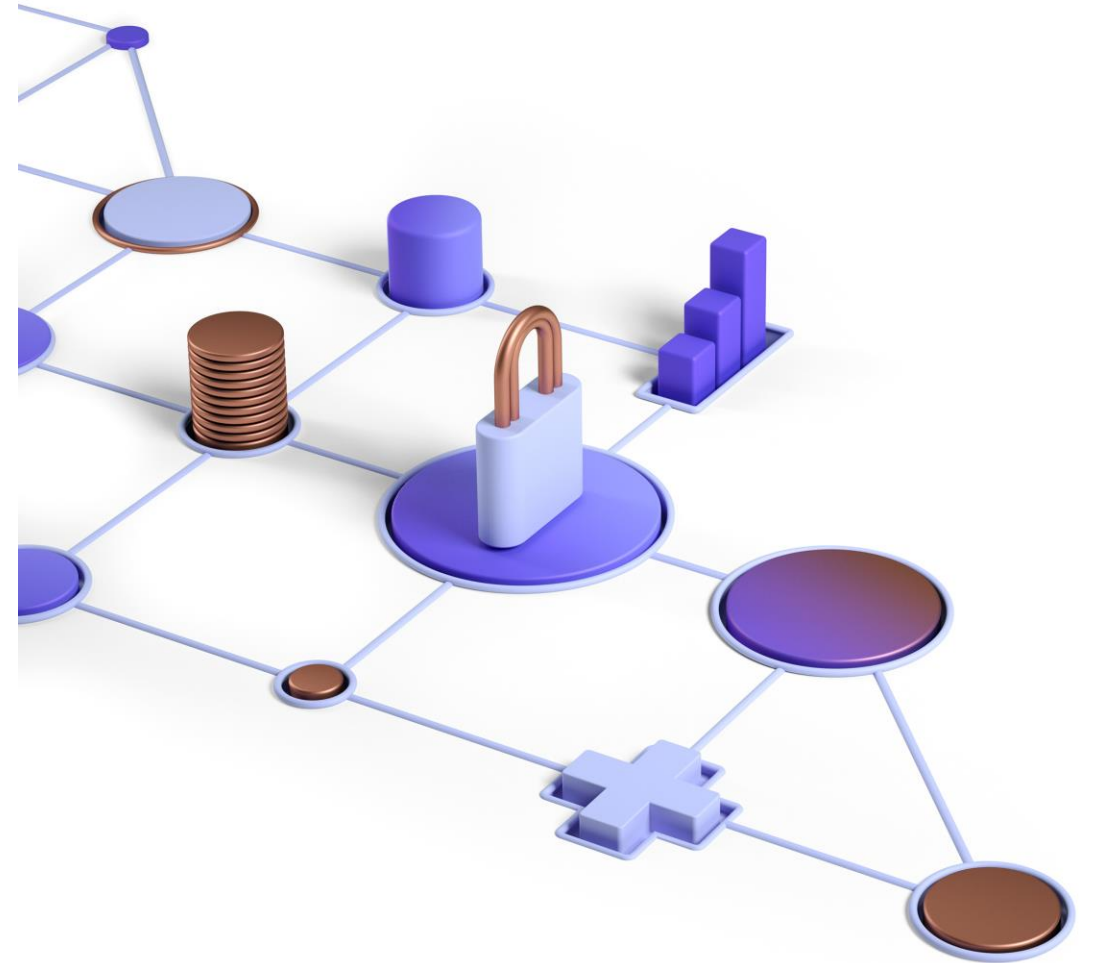
The art market 艺术市场

The Next Rembrandt!

下一个伦勃朗!

Can the master be brought back to create one more painting?

能让大师复活，再创作一幅作品吗？

The art market 艺术市场

Algorithmic creation – GAN
算法创造 - 生成对抗网络

Exhibition "Faceless portraits technology " exposed in NYC in early 2019 is a collaboration between an artificial intelligence programme (AICAN) and its creator Dr Ahmed Elgammal (who until then was a software researcher and not an artist.) Works of art are produced based on the stored 3000 Renaissance portraits, allowing however for the expression of the evolution of the art)

2019年初在纽约展出的"无名肖像技术"，是AI程序（AICAN）与其创造者Ahmed Elgammal博士（当时他仍是软件技术研究员，并非艺术家）的合作成果。所生成作品以数据库中存储的3000幅文艺复兴时期肖像为基础，但允许对艺术演变过程的表达。

THE LAW AND LEGAL TECH
法律与法律技术

IP-related issues in AI
人工智能中的知识产权相关问题

- Patentability of AI-inventions (see EPO updated guidelines)
- 人工智能发明的可专利性（见欧洲专利局新指南）
- Inventorship/authorship
- 发明人／作者
- AI as an author? Machine learning can in fact develop its own code.
- 人工智能是作者吗？机器学习事实上能够开发自己的代码。
- AI opening up for even broader participation of users/recipients in the creative process (see for instance Netflix smash hit Stranger Things, based on users searching for its core themes through its algorithm...)
- 人工智能让更多的用户／接收者参与创作过程（如Netflix爆款电视剧《怪奇物语》就是通过算法，基于用户对核心主题关键词的搜索记录而创作的）
- Liability of AI applications
- 人工智能应用的责任归属

AI as a tool for IP laywers
人工智能作为知识产权律师的工具

- Do we really need help? (see Boolean search features of LexisNexis and Westlaw)
- 我们真的需要帮助吗？（见律商联讯和万律两个法律数据库的布尔搜索特征）
- Repeatable results possible (time, fatigue not an issue)
- 能产生可复验的结果（时间消耗、人员疲劳不再是问题）
- The questions we can pose to AI nowadays are more and more complex and qualified
- 现在，我们能够向人工智能提出的问题越来越复杂、专业
- We do not always ask AI because it is faster…it is often much more correct than humans
- 我们并不总是因为速度快而诉诸人工智能……而往往是因为它比人类更准确

Current AI trends 当前人工智能的趋势

- Due diligence (uncover background information)
- 尽职调查（揭示背景信息）
- Legal analytics (data from past case law, judge's history to show trends/partners)
- 法律分析（根据判例和法官既往判决资料，揭示趋势／人物关系）
- Document automation
- 文档自动化
- Intellectual Property search and management
- 知识产权搜索与管理

Due diligence 尽职调查

eBrevia - AI extracting relevant textual data from legal contracts and other documents – 50 documents in less than a minute

eBrevia-通过人工智能，从法律合同和其他文档中提出相关文本数据：一分钟不到，便可处理50份文件

JPMorgan - COIN (Contract Intelligence) extracts 150 attributes from 12000 commercial agreements in only a few seconds (what would require approximately 36000 hours of legal work)

摩根大通-COIN（合约情报系统）只需几秒钟，就能从12000份商业协议中提取150个属性（约等于36000小时法务人工工作量）

ThoughtRiver: can even alarm for risky contracts immediately

ThoughtRiver: 甚至可以立即针对风险合同发出警报

Legal Robot: score contracts based on language complexity, legal phrasing and enforceability

**Legal Robot**：基于语言复杂度、法律措辞和可执行性对合同进行打分

Legal analytics 法律分析

- **Casetext** (allow laywers to forecast an opposing counsel's arguments by finding opinions that were previously used by lawyers
- **Casetext** （一方律师通过寻找其他律师的过往主张，预测对方律师会采用的论点与论据）
- **Loom:** judge rulings to track trends
- **Loom**： 根据法官的判决追踪趋势
- **Lex Machina** (statistics on time to trial, likelihood that a certain party or attorney will settle the case)
- **Lex Machina** （庭审前所需时间、某当事方或者其代理律师庭外和解的概率等统计数据）
- **Project Debaser** AI designed to make coherent arguments against a human opponent
- **Project Debaser** （能与人类对手辩论、作出连贯论述的人工智能系统）
- American Law Professor, **Daniel Martin Katz** created an algorithm with the objective of predicting outcomes in the Supreme Court (in fact went through 7700 cases from 1953-2013 and was right in 70% of the cases)
- 美国法学教授**Daniel Martin Katz**开发了用于预测美国最高法审判结果的算法（针对1953~2013年的7700个案件，该算法准确率达到70%）

IP 知识产权

- **WIPO** database for trademark search
- **世界知识产权组织** 商标检索数据库
- **EUIPO** search functions
- **欧盟知识产权局** 检索功能
- **SmartShell**: generates draft responses to USPTO office actions based on the office action, claims and application (it also produces legal and technical arguments in response to grounds of rejection)
- **SmartShell**：基于美国专利及商标局各个办事处的行动、主张和应用，产生针对其行动的初步应对方案（也针对其驳回理由，生成法律和技术性论述）
- **TransPerfect** (AI in translation based on artificial neural networks)
- **TransPerfect**（基于人工神经网络的AI翻译）
- **TrademarkNow:** Trademark search (similarity, creating new names)
- **TrademarkNow**：商标检索（近似性、新商标创意）
- **Patent search/prior art search (see also recent USPTO initiative)**
- **专利检索／前案检索（另见近期美国专利及商标局的行动计划）**
- **TurboPatent:** automatically generates patent applications based on disclosures provided by an applicant (possibility to predict possible grounds of rejection)
- **TurboPatent：基于申请人披露的信息，**自动生成专利申请（可预测可能的驳回理由）

AI Limitations 人工智能的局限性

- AI is only as strong as its algorithm + data (AI does what it is programmed to do)
- 人工智能之优势全在于算法＋数据（人工智能系统按照事先编写的程序运行）
- A human must supervise and review the results (cannot trust 100%)
- 人类必须监督和审核人工智能的结果（不能100%信赖）
- A 2019 MIT study concerning translations: human translations still more accurate (the AI translations are best when a couple of words or shot phrases)
- 2019年麻省理工学院针对翻译开展的一项研究表明：人类翻译依然更加准确（在只有一两个单词或者短语的情况下，人工智能是最佳选择）
- Oral interaction (even though this is developing as well)
- 口语会话交互（但相关技术也在发展之中）
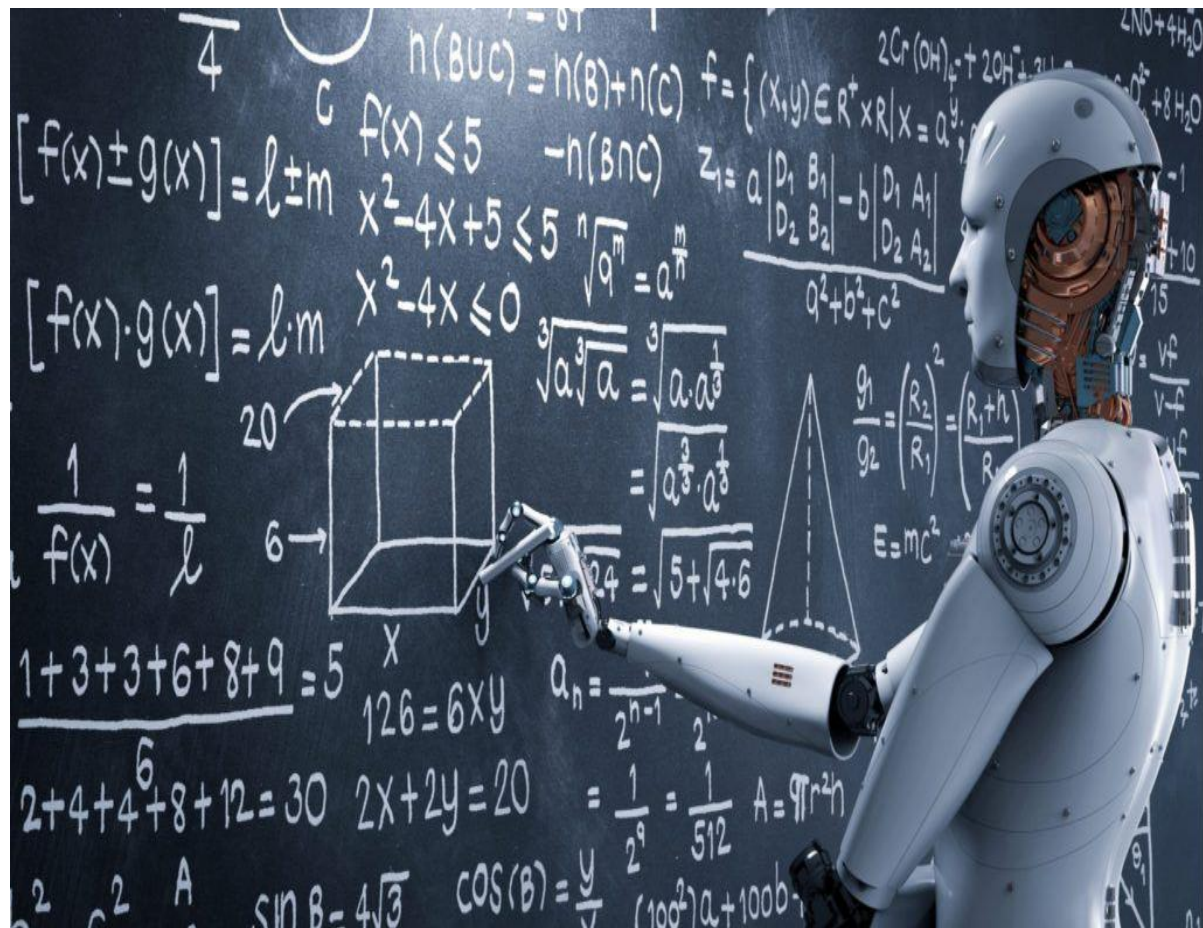
Will it influence the way lawyers work?
人工智能会影响律师的工作方式吗?

- In a Deloitte study from 2016 it is claimed that 114.000 employments in the legal sector will disappear in UK in a 20 years period
- 德勤在2016年的研究中声称，未来20年内，英国法律业将减少114,000份工作岗位
- Richard Susskind: "In 10 years time if you were to look at the top 20 legal providers by revenue, half will be non-lawyers"
- Richard Susskind: "十年之后，按收入排名的前20家法律服务提供商中，有一半会是非传统律所"
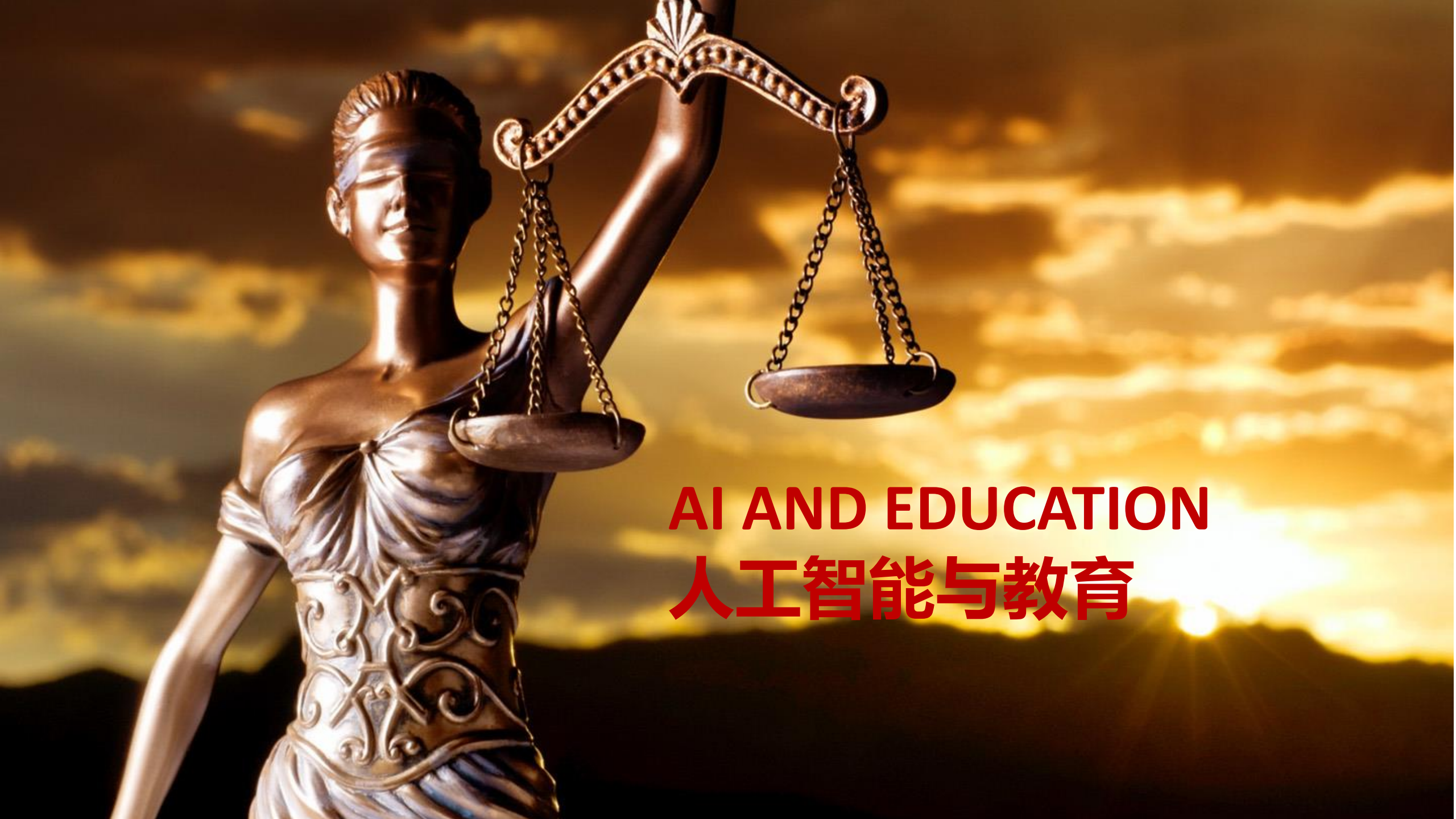
AI AND EDUCATION
人工智能与教育

What does this mean for us educating future lawyers?
对于我们培养未来的律师，这意味着什么？

- AI will continue to develop
- 人工智能将继续发展
- Critical perspective – making value out of basic legal services
- 关键视角：从基础法律服务中产生价值
- Oral advocacy
- 口头辩论
- Lawyers will be better informed
- 律师的知情度会提高
- Clients will be better informed
- 客户的知情度也会提高
- More complicated analytical skills
- 更复杂的数据分析技能
- Negotiation skills
- 谈判技能
- Monitor AI – skills in AI necessary
- 监控人工智能：有必要培养人工智能领域的技能

What does this mean for us educating future lawyers?
对未来律师的培养，这意味着什么？

- Lawyers: analytical, strategic management, risk management
- 律师：分析、战略管理、风险管理
- Legal analysts, legal technologists, legal knowledge engineeers (organizing, structuring legal work, monitoring AI etc)
- 法律分析师、法律技术人员、法律知识工程师（组织、部署法律工作，监控人工智能等）
- A need for a combined education with IT or maybe AI courses in the traditional legal education
- 需要在传统法律教育中，融入信息技术或人工智能课程
- Training other skills than previously or at least changing focus
- 需要培养不同于以往的新技能，或者至少要改变关注点
- And the traditional legal education needs to enhance exactly those skills that differentiate lawyers from legal tech: oral argumentation, strategic planning, negotiation skills, enhanced analytical capacity, client contact
- 传统法律教育需要精准加强可以将律师与法律技术人员区分的技能，如：口头辩论、战略规划、谈判技巧、加强分析能力、客户接洽
- Do we really train these skills today?
- 我们今天真的需要培养这些技能吗？

Thank you!
谢谢

Frantzeska Papadopoulou
Email: frantzeska.papadopoulou@juridicum.su.se