Neapolis University Pafos

Open Educational Resources (OER)
NUP Jean Monnet Chair

Thematic dossier:

Deploying Artificial Intelligence for Anti–Money Laundering

Developed by Dr. Georgios Pavlidis, Jean Monnet Chair, NUP

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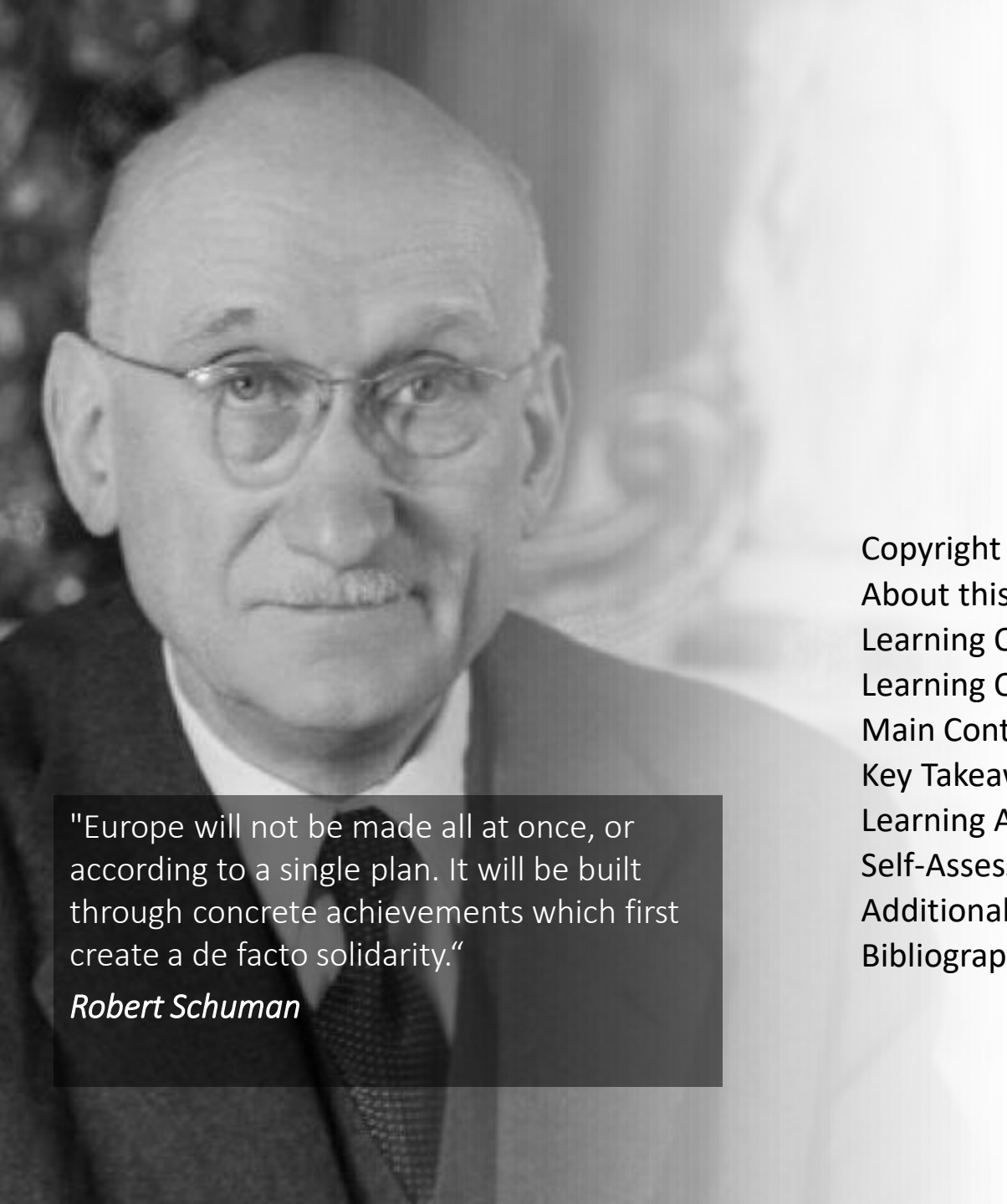

"Europe will not be made all at once, or according to a single plan. It will be built through concrete achievements which first create a de facto solidarity."

Robert Schuman

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About this OER

About this OER

1. **Author:** This OER has been developed by Dr Georgios Pavlidis, Assistant Professor of International and EU law at NUP, Cyprus as part of the activities of the Jean Monnet Chair. You can find more information about this projects at https://www.nup.ac.cy/jean-monnet-chair/
2. **Methodology:** This OER was developed in accordance with the principles of the UNESCO Recommendation on Open Educational Resources, as well as the Cape Town Open Education Declaration and the Paris OER Declaration, which deal with the application of open licenses to educational materials.
3. **Target audience:** This OER is designed for undergraduate students in the fields of law, political sciences, social sciences, etc, as well as for lawyers, judges, prosecutors and practitioners who are interested in the EU action in the areas of asset recovery and AML.
4. **The topic of this OER:** This OER deals with the deployment Artificial Intelligence for Anti–Money Laundering and the challenges for its regulation at national and EU law (see sections **Learning Objectives** and **Learning Outcomes**)

About this OER

5. **Navigation:** This OER is structured into several sections, including an introduction, main content, learning activities, and additional resources. Use the table of contents provided to navigate through the OER and locate specific sections of interest.
6. **Reading and Understanding:** Begin by reading the introduction to gain an overview of the OER's purpose and learning objectives. Proceed to the main content, where you will find in-depth information and key concepts related to the topic. Take your time to understand the presented information and ensure comprehension before moving forward.
7. **Learning Activities:** In this OER you will encounter learning activities designed to enhance your understanding and application of the concepts covered. Engage with these activities to reinforce your learning and test your knowledge. Feel free to discuss the activities with peers or seek additional resources to deepen your understanding further.
8. **Reflection and Critical Thinking:** As you progress through the OER, take the opportunity to reflect on the concepts presented and consider their implications. Encourage critical thinking by asking questions, analyzing examples, and connecting the information to real-world scenarios.

About this OER

9. **Additional Resources:** The OER provides a list of additional resources, such as books, articles, websites, or videos, that you can explore for further study or to delve deeper into specific topics covered. Take advantage of these resources to expand your knowledge and explore related areas of interest.
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11. **Continuous Learning:** The field of knowledge covered by this OER is continually evolving. Stay updated by seeking current research, publications, or news related to the topic. Consider engaging in discussions or attending relevant events to stay connected with advancements in the field.

We hope that this OER serves as a valuable resource for your learning journey. If you have any questions or require further assistance, please reach out to us at: g.pavlidis@nup.ac.cy

Enjoy your exploration and learning!

Georgios Pavlidis

Jean Monnet Chair, NUP

Learning Objectives

Learning Objectives

1. Understand the potential benefits and risks associated with the use of AI in AML/CFT compliance.
2. Gain knowledge of the principles and rules for responsible and ethical AI use in AML/CFT, including transparency, accountability, and privacy considerations.
3. Explore the challenges and regulatory issues related to AI in AML/CFT, such as fairness, explainability, and oversight.
4. Develop an awareness of the importance of coordinated national and international action in addressing AI-related risks, promoting harmonization of rules, and facilitating dialogue among policymakers, financial industry stakeholders, and tech companies.

Learning Outcomes

Learning Outcomes

1. Upon completing the OER, learners will be able to analyze and evaluate the potential benefits and risks associated with the integration of AI in AML/CFT compliance.
2. At the end of the OER, learners will demonstrate a comprehensive understanding of the principles and rules necessary for responsible and ethical AI use in AML/CFT, including transparency, accountability, and privacy considerations.
3. By the end of the OER, learners will be able to identify and assess the regulatory challenges and issues surrounding AI in AML/CFT, such as fairness, explainability, and oversight.
4. After completing the OER, learners will be equipped with the knowledge and understanding needed to recognize the importance of coordinated national and international action in addressing AI-related risks, promoting rule harmonization, and facilitating dialogue among stakeholders in the financial industry, policymakers, and tech companies.

Main Content

Key issues

- Deployment of new technologies for AML/CFT (anti-money laundering/countering the financing of terrorism) is seen as a game changer in the industry.
- These technologies, known as RegTech, utilize AI and its subsets like machine learning and natural language processing to improve compliance and regulatory requirements.
- Adapting AML/CFT to digital transformation requires adherence to national, EU laws, and Financial Action Task Force (FATF) rules.

Key issues

- AML/CFT compliance is complex due to increasing cross-border transactions, sophisticated money laundering techniques, and rising suspicious activity reports (SARs).
- Regulated entities and FIUs face challenges processing SARs and dealing with evolving regulatory environments, diversification of AML/CFT standards, and targeted sanctions.
- Financial institutions allocate significant resources to compliance teams to avoid non-compliance fines and review numerous alerts effectively.

Key issues

- Investment in RegTech is expected to reach USD 115 billion in 2023 and surpass USD 204 billion by 2026.
- Standardization and consistency are crucial for successful AML/CFT compliance, as there is a lack of commonly accepted standards for the digital transformation of AML/CFT.
- The emergence of new legislative frameworks, such as the proposed EU AI Act, may create a fragmented regulatory landscape, requiring standard-setting work at the international level.

Money Laundering Techniques and the Future

Digital transformation of AML/CFT for regulated entities and FIUs

- The digital transformation of AML/CFT helps regulated entities, especially financial institutions, improve compliance with national and international standards.
- AI-based tools can enhance customer identification and transaction monitoring, addressing challenges for regulated entities and FIUs.
- AI tools improve client screening and risk rating, aiding in fraud detection and identity verification during customer onboarding.

Digital transformation of AML/CFT for regulated entities and FIUs

- AI-based tools utilize various data sources to enhance KYC processes, such as biometric facial recognition, sanction watch lists, and PEP registers.
- Transaction monitoring benefits from AI tools that process large volumes of data in real-time, identify patterns of customer behavior, and detect anomalies and suspicious activity.

Digital transformation of AML/CFT for regulated entities and FIUs

- Adaptive behavioral analytics and predictive modeling help identify suspicious activities and reduce false alerts.
- AI-based tools enable dynamic risk assessments by combining real-time transaction data with multiple datasets, allowing for more accurate and detailed compliance.
- Data pooling and sharing, collaborative analytics, and appropriate access by supervisors are essential for effective AI-based tools in AML/CFT.

Digital transformation of AML/CFT for regulated entities and FIUs

- FIUs can benefit from AI-based tools by improving efficiency, quality, resource deployment, and adopting a more dynamic risk-based approach.
- AI tools assist FIUs in sorting, analyzing, and prioritizing large volumes of data, increasing the quality of AML/CFT analysis.
- Digital tools streamline mundane tasks for FIU analysts, allowing them to focus on analytical tasks and emerging risk identification.

Principles for the responsible use of AI in AML/CFT

Oversight

Mechanisms need to ensure respect of fundamental rights

Neutrality

AI-based decisions may be susceptible to bias.

Transparency

Decisions made by AI tools are not always intelligible to humans who may be affected

Legitimacy

AI processes need to rely on legal provisions and rigorous ethical standards

Principles for the responsible use of AI in AML/CFT

- Improper use of AI in AML/CFT can undermine due process, equal protection, and transparency.
- AI-based tools may lead to flawed automated decision-making or profiling due to subjective data inputs and selection bias.
- AI can amplify biases and discrimination, as seen in cases of racial profiling in terrorism financing investigations.

Principles for the responsible use of AI in AML/CFT

- Concerns about cyber resilience, data security, quality, consistency, completeness, privacy, and protection of fundamental rights arise with the deployment of AI in AML/CFT.
- The FATF San Jose principles emphasize collaboration between governments and the private sector, positive and responsible innovation, and a smart regulatory framework.
- The San Jose principles lack clarity on responsible innovation, smart regulation, and the protection of fundamental rights.

Principles for the responsible use of AI in AML/CFT

- The OECD principles for AI promote inclusive growth, compatibility with the rule of law and human rights, transparency, and accountability.
- Informed oversight and expertise are necessary for effective supervision of AI-based systems in AML/CFT.
- The EU AI Act proposes binding regulations for AI, including a risk-based approach with prohibitions, assessments, and transparency obligations.

Principles for the responsible use of AI in AML/CFT

- The EU AI Act's risk-based approach applies to the use of AI in AML/CFT, considering it high-risk due to crime analytics and data analysis for identifying patterns and relationships.
- The EU AI Act requires human oversight, model explainability, data security, and compliance with high-quality standards for AI systems in AML/CFT.
- Regulated entities and FIUs need to establish new operational governance structures and roles, such as AI compliance officers, to comply with the EU AI Act.

Concluding Remarks

In Search of Datasets

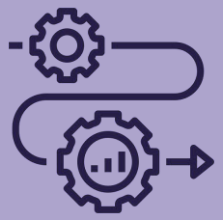
Lack of high-quality, large training datasets regarding ML methods

Retention of data

General & indiscriminate retention of data cannot be accepted.

Evolution of AML

Market participants must be extremely vigilant and adaptive.

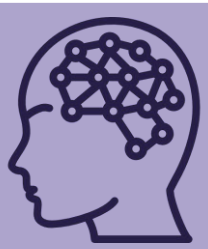


The Human Element

AI tools should supplement, not replace, traditional KYC and AML compliance mechanisms

Other Risks

Cybersecurity, privacy, lack of coordination between regulators, use of adversarial AI



The Potential of AI in AML

Lower regulatory risk, reduced compliance costs, increase AML efficiency

Key Takeaways

Key Takeaways

1. The use of AI in AML/CFT has revolutionized compliance efforts, reducing risks and increasing efficiency.
2. However, AI in AML/CFT also presents challenges such as privacy, fairness, explainability, and oversight.
3. Principles and rules for responsible and ethical AI use in AML/CFT are necessary.
4. Transparency, accountability, and understanding of AI systems are crucial for responsible use.
5. AI should not perpetuate discrimination or bias, and privacy and data protection laws must be upheld.
6. Coordinated action at national and international levels is essential to address risks and harmonize rules.
7. Continuous dialogue between policymakers, financial industry, and tech companies is necessary for effective AI deployment in AML/CFT.

Learning Activity

Learning Activity

Activity: Exploring the Opportunities and Challenges of AI in AML/CFT

1. Read the material in this OER about AI in AML/CFT and its implications.
2. Conduct additional research using reputable sources such as academic journals, reports, or official guidelines to gather more information on the topic.
3. Create two lists: one listing the potential benefits of using AI in AML/CFT, and the other outlining the challenges or concerns associated with its implementation.
4. Participate in a group discussion or forum to share and discuss your lists with your peer

Benefits of AI in AML/CFT: Enhanced detection; improved prevention; cost and efficiency; advanced analytics; enhanced compliance.

Challenges of AI in AML/CFT: Privacy concerns; fairness and bias; explainability; regulatory oversight; data protection.

Learning Activity

Group Presentation and Reflection:

1. Form pairs or small groups and choose one challenge from the list.

2. Research and prepare a short presentation on the impact of the selected challenge on AI in AML/CFT, and propose strategies to mitigate associated risks.

3. Present your findings and recommendations to the rest of the participants.

4. Engage in a reflective group discussion, considering the implications of the challenges and the importance of responsible AI governance.

Conclusion: Through this learning activity, you have explored the opportunities and challenges presented by the use of AI in AML/CFT. You have gained insights into the need for transparency, fairness, privacy protection, and regulatory oversight in the deployment of AI tools. Remember, responsible and ethical AI governance is crucial to ensure the positive impact of AI on AML/CFT while mitigating risks.

Self-Assessment Questions

Self-Assessment Questions

How can AI revolutionize AML/CFT compliance in terms of reducing regulatory risks, compliance costs, and increasing procedure efficiency?

What are some of the regulatory challenges posed by the use of AI in AML/CFT, including privacy, fairness, explainability, and oversight?

What are the key principles and rules that need to be established for the responsible and ethical use of AI in AML/CFT?

Why is coordinated action at both national and international levels necessary in addressing the risks and promoting the appropriate use of AI in AML/CFT?

Additional Resources

Additional Resources at EU level

Proposal for a Regulation laying down harmonised rules on artificial intelligence (Artificial Intelligence Act), COM(2021) 206 final

Directive 2018/843 of the European Parliament and of the Council of 30 May 2018 amending Directive 2015/849 on the prevention of the use of the financial system for the purposes of money laundering or terrorist financing, OJ L 156, 19.6.2018, p. 43.

Bibliography

Bibliography

Amicelle, A. (2022), “Big Data Surveillance Across Fields: Algorithmic Governance for Policing & Regulation”, Big Data & Society, Vol. 2022 No 2, pp. 1–12.

Arner, D. et al. (2019), ‘The Identity Challenge in Finance: From Analogue Identity to Digitized Identification to Digital KYC Utilities”, European Business Organization Law Review, Vol. 20, pp. 55–80.

Bertrand, A., Maxwell, W., Vamparys, X., (2021), “Do AI-based anti-money laundering (AML) systems violate European fundamental rights?” Int’l Data Privacy Law, Vol. 11 No. 3, p. 276 ff.

Breslow, S. et al. (2017), “The New Frontier in Anti–Money Laundering”, McKinsey & Company Brief.

Data Protection Working Party (2018), “Guidelines on Automated individual decision-making and Profiling for the Purposes of Regulation 2016/679”, Guidelines 17/EN WP 251 rev 01.

European Supervisory Authorities (2018), “Opinion on the Use of Innovative Solutions by Credit and Financial Institutions in the Customer Due Diligence Process”, ESA Opinion JC 2017 81.

Executive Office of the President (2016), “Big Data: A Report on Algorithmic Systems, Opportunity, and Civil Rights”, Executive Office of the President Report.

FATF & Egmont Group (2021), “Digital Transformation of AML/CFT for Operational Agencies”, FATF Report, Paris.

FATF (2017), “Anti-Money Laundering and Terrorist Financing Measures and Financial Inclusion with a Supplement on Customer Due Diligence”, FATF Report, Paris.

FATF (2020), “Guidance on Digital Identity”, FATF Guidance, Paris.

FATF (2021a), “Opportunities and Challenges of New Technologies for AML/CFT”, FATF Report, Paris.

FATF (2021b), “Stocktake on Data Pooling, Collaborative Analytics and Data Protection”, FATF Report, Paris.

FATF (2021c), “Suggested Action to Support New Technology for AML/CFT”, FATF Report, Paris.

Bibliography

Feuerriegel, S., Dolata, M., Schwabe, G. (2020), “Fair AI: Challenges and Opportunities”, Business & Information Systems Engineering, Vol. 62, pp. 379–384.

Institute of International Finance (2018), “Machine Learning in Anti-Money Laundering”, IIF Summary Report.

Juniper Research (2018), “How Regtech is Revolutionising Compliance”, Juniper Research White Paper.

Juniper Research (2022), “Regtech: Emerging Trends, Regulatory Impact & Market Forecasts 2022 2026”, Juniper Research Report.

KPMG (2018), “There’s a Revolution Coming: Embracing the Challenge of RegTech 3.0”, KPMG Report.

OECD (2019), “Recommendation of the Council on Artificial Intelligence”, OECD Recommendation OECD/LEGAL/0449.

Partington, R. (2017), “Banks Trimming Compliance Staff as $321 Billion in Fines Abate”, Bloomberg, 23 March 2017.

Pavlidis, G. (2021), “Financial Action Task Force and the Fight against Money Laundering and the Financing of Terrorism: Quo Vadimus?”, Journal of Financial Crime, Vol. 28 No 3, pp. 765-773.

Pavlidis, G. (2022), “Europe in the Digital Age: Regulating Digital Finance Without Suffocating Innovation”, Law Innovation and Technology, Vol. 13, pp. 464-477.

Stone, P. et al. (2016), “Artificial Intelligence and Life in 2030 - One Hundred Year Study on Artificial Intelligence”, Stanford University Study Panel, available at: <http://ai100.stanford.edu/2016-report> (accessed 1 March 2023).

Walshe, J. and Cropper, T. (2018), “Should You Be Banking on RegTech?”, Journal of Securities Operations & Custody, Vol. 10 No 2, pp. 167-175.

Yeoh, P. (2019), “Artificial Intelligence: Accelerator or Panacea for Financial Crime?”, Journal of Financial Crime, Vol. 26 No. 2, pp. 634-646.

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As you reach the end of this OER, we encourage you to continue your educational journey. Take what you have gained from this OER and apply it in practical ways. Share your insights with others, collaborate, and contribute to the collective wisdom of our global community.

Thank you once again for being part of our educational journey. We are grateful to have had the opportunity to inspire and empower you and we wish you success in all your future endeavors.

With gratitude,

Georgios Pavlidis

Jean Monnet Chair, NUP

The Jean Monnet Chair at NUP

Since 2020, Neapolis University Pafos has the honor to be the host of a prestigious Jean Monnet Chair, which has been awarded to Dr. George Pavlidis to further promote his teaching and research into innovative methods for "Targeting Criminal Assets in the European Union". The Jean Monnet Chair at NUP fosters the development of existing and new teaching, including Open Educational Resources (OER), while research activities and events give greater visibility to this field of study at national and regional level. The promotion of knowledge sharing though OERs, a working papers series and a knowledge database on asset recovery fall within the mission objective of the NUP School of Law, which aims to consolidate a strong contribution to the discussion on the future of the European integration.

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