

ETHICAL PRINCIPLES FOR ADVANCED ANALYTICS AND ARTIFICIAL INTELLIGENCE IN FINANCIAL SERVICES

December 2020



FOREWORD

In recent years, organisations across many sectors have increasingly recognised opportunities for data and Advanced Analytics and Artificial Intelligence (AAAI or ‘triple-AI’) to enhance value to the customer, improve inclusion and benefit wider society. Indeed, the rate of digital transformation has accelerated as a result of Covid-19 and the transient vulnerability and economic uncertainty it presents. Organisations are increasingly aware of the urgency and need to invest in technologies in order to address issues arising from the pandemic.

Within the healthcare sector, for example, there has been a rise in the use of AAAI to support the diagnosis and prognosis of Covid-19, from AI imaging technologies through to AI models that use voluntary voice recordings to identify asymptomatic individuals. Beyond the pandemic, AI is being used in cancer screening, realising great benefits such as improved care outcomes and reduced costs for the NHS.

On the path to recovery, financial services organisations that have pivoted to digital platforms are likely to continue innovating and progressing in this space, with data and AAAI-driven organisations anticipated to emerge as industry frontrunners in the post-pandemic world. The financial services sector has been successfully using AAAI for some

time in several critical functions, including financial crime and fraud detection. This progress is set to continue, with new use cases emerging in a range of functions and product areas.

However, the increasing use in many sectors of highly sophisticated (and sometimes opaque) algorithms for automated and semi-automated decision making could raise concerns and suspicions regarding the use of data and AAAI, and the outcomes produced. With the increasing prominence of data strategies that focus on generating revenue through products and services, it is vital that public trust is maintained, and indeed enhanced. In the UK, the use of an algorithm by the Office of Qualifications and Examinations Regulation (Ofqual) to determine 2020 A-levels, for example, illustrated the challenges, as well as the increasing media attention drawn to potentially unethical uses of AAAI. In this particular case, concerns were raised that the algorithm had socioeconomic bias, and also that there was a lack of explainability on how pupils’ grades were calculated, which made it difficult to review or challenge decisions of significant impact. Considering this evolving digital landscape, the financial services industry is moving to be a leader in data and AI ethics. We are seeing firms engage in nuanced debate of the merits of products in

governance forums, formulate new controls and invest in ethical training for their workforce.

As the application and governance of AAAI continues to develop, our ethical principles for AAAI aim to serve as a valuable resource to financial services organisations. We hope that these principles will be a helpful contribution to the debate.



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INTRODUCTION

Background and purpose

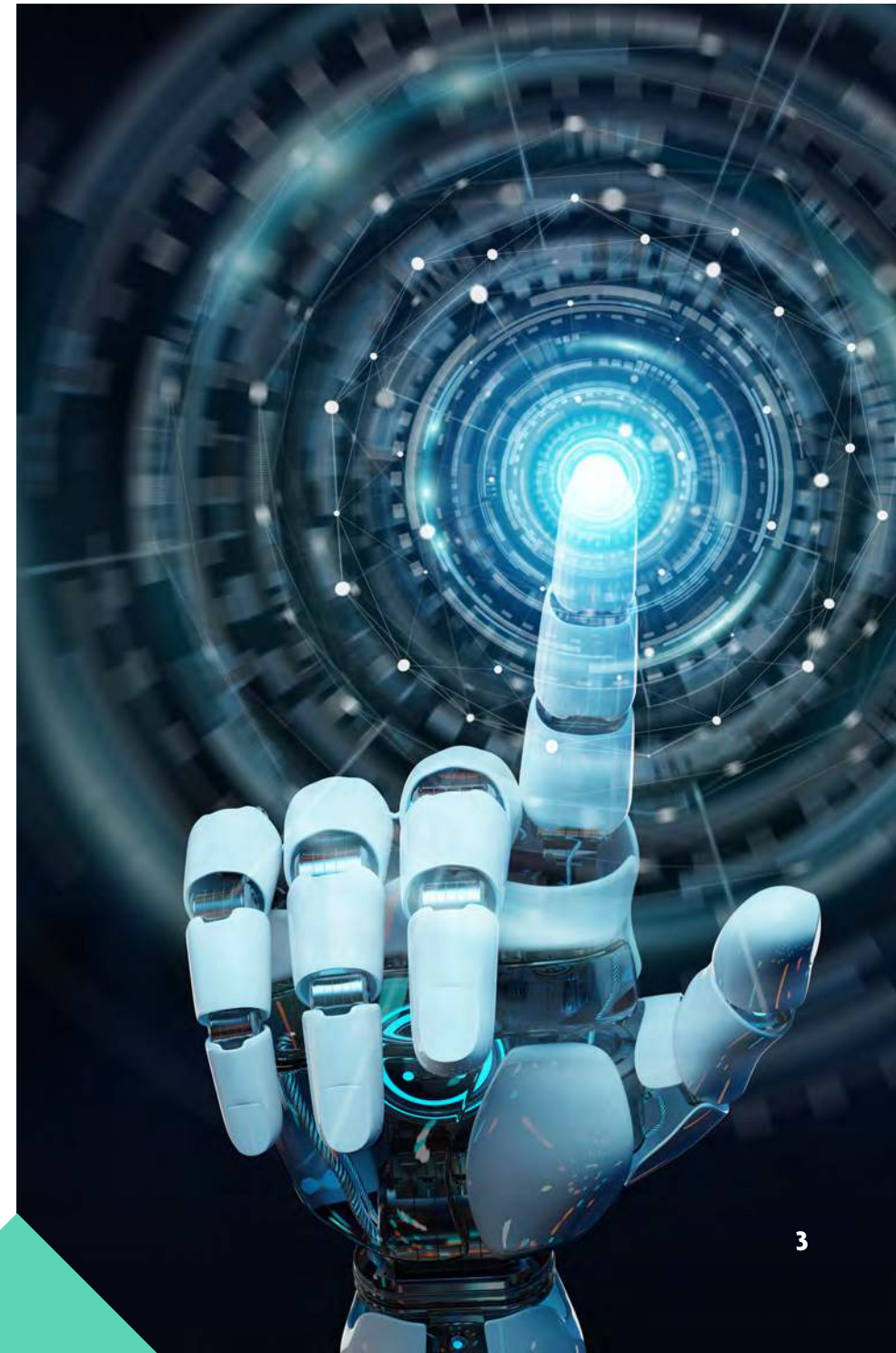
Strides in modern data science have triggered an ever-increasing development and deployment of Advanced Analytics and Artificial Intelligence (AAAI or 'triple-AI').

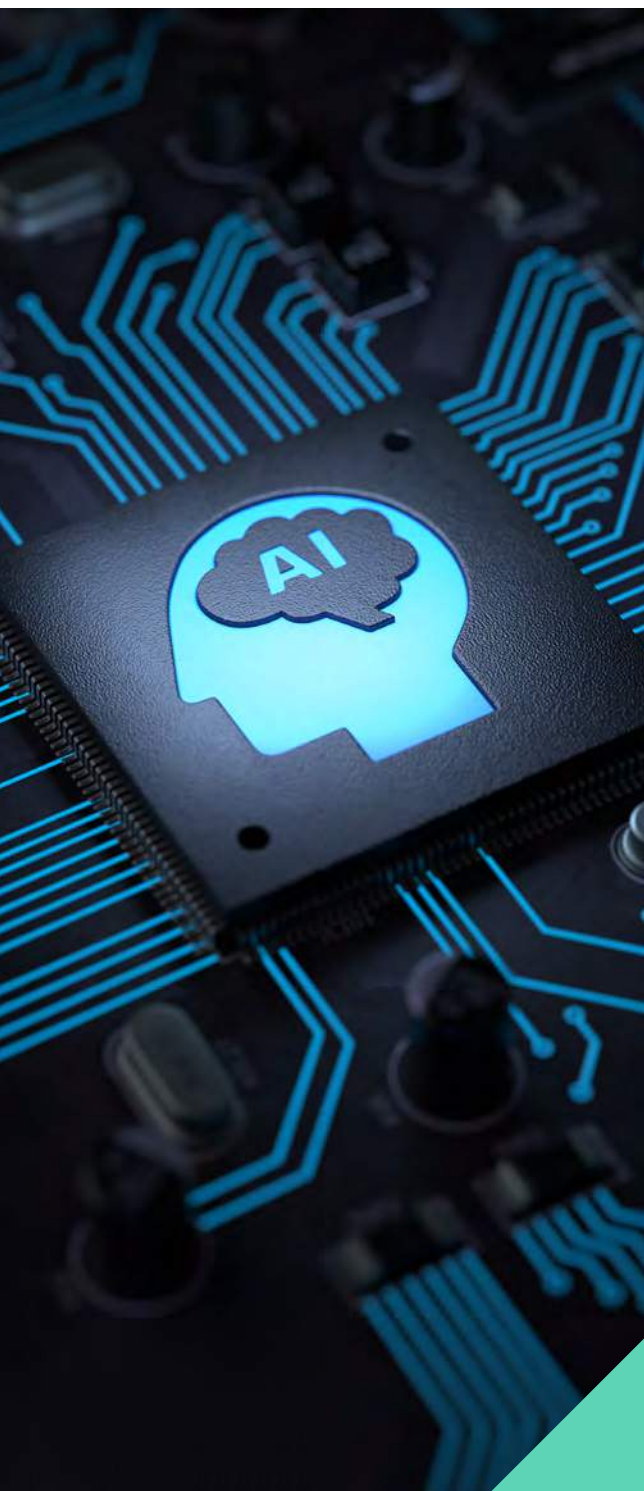
In some cases, these advanced technologies are used to help inform human decision-making. In other cases, they are fully automated and embedded in decision making. AAAI technologies permit analysis to be performed and decisions to be made at a speed, scale and accuracy that would be very difficult for humans to achieve alone. They are being deployed across the economy to enable new and better services, products, and business processes, to increase accuracy, efficiency and opportunity, and to better respond to individuals' needs.

In parallel, we are seeing increased public and regulatory interest. There is recognition that these technologies offer potential for good but also pose risks of unintended negative consequences.

In recent years there have been examples across multiple countries and sectors of AAAI applications not meeting expectations. This has led to concern over algorithms that help decide how important services are provided, which have in some instances produced unfair outcomes or outcomes that cannot readily be explained.

But we should not let these instances make us lose sight of the potential for AAAI to be used in a responsible and ethical way, and as a force for good. For example, we are seeing positive efforts towards ethical design, such as the evolving thinking on how data can be used to support vulnerable customers without overriding customer autonomy and privacy.





About the AAAI Principles

Banking and financial services firms want to ensure the right outcomes are delivered to both their customers and their employees. Having a set of sound ethical principles when implementing AAAI will help financial services firms navigate the potential pitfalls and achieve outcomes that are fair for customers and staff, and maintain public trust.

Financial services in the UK is one of the most extensively regulated industries. For financial services firms, the use of AAAI is subject not only to the economy-wide rules of data protection and equalities law, but also the FCA and PRA Handbook, as well as laws relating to specific activities such as lending and payments. These rules help guide firms' ethical thinking, but regulation cannot fully anticipate or address the potential effects of AAAI on customers or wider society. Moreover, ethics cannot be translated directly into law. Rather, regulation and ethics support each other.

Having a set of ethical principles for AAAI complements the regulatory framework by helping firms in considering the key risks when developing a new use case. High-level principles also help firms engage their workforce and ensure employee buy-in, which is essential to ensuring effective implementation throughout an organisation.

We have developed five ethical principles that financial services firms can apply when developing products, services and back-office applications that rely on AAAI. The principles are not 'rules'. Rather, they are intended to be a valuable resource to firms as a point of reference for developing or enhancing their own internal principles and governance. They are designed to be flexible enough to be adapted as appropriate to the diverse use cases to which AAAI can be applied, using a proportionate and risk-based approach. Each principle is supported by several sub-principles, which provide more detailed considerations.

Ethical thinking in all industries should be a 'race to the top'. Notions of ethics can progress over time and technology will surely also develop, with many new use cases yet to emerge. Reflecting on guiding principles can help firms ask the right questions as technology and culture continue to evolve. But, over time, refinements to our principles will no doubt also be needed.

Methodology

These principles were prepared using two complementary approaches. We started with desk research, aiming to leverage the existing academic and regulatory literature on ethical AI and data ethics, and to achieve alignment where possible. We built on this through industry engagement. The principles were drafted, iterated and refined with input from a working group of experts from among UK Finance members of different business types to ensure a focus on the key considerations for financial services institutions. KPMG provided expert assistance and guidance throughout the process.

Final remarks

Financial services firms are at various stages in engaging with AAAI and setting up their governance frameworks. Some are just beginning, while others are well advanced. Similarly, firms will take different approaches, in line with their other processes, products and corporate culture. These principles are intended to serve as a valuable resource to financial services firms as they continue to develop their own governance of AAAI (or, indeed, they could be adapted by firms in other sectors). But this is just the beginning. We encourage firms to also work on effective implementation and monitoring practices.

Definitions & Scope

The below sets out the scope of our ethical principles for AAAI

Advanced Analytics & Artificial Intelligence (AAAI)	
<ul style="list-style-type: none">Advanced Analytics & Artificial Intelligence (AAAI) includes machine learning and other advanced data science methods, models and systems, where they have an impact on AAAI subjects, as well as the data used in these solutions.	
AAAI Subject(s)	
<ul style="list-style-type: none">The individual or group of individuals that are affected by the logic or decisions made by AAAI, such as:<ul style="list-style-type: none">Current and potential customers and clientsCurrent and potential employees and workforce	
Purpose & Context	
<ul style="list-style-type: none">The principles could have different levels of relevance and be applied in different ways, proportionate to risk, depending on the use case and wider context. Within financial services, typical AAAI use cases would include:	
<ul style="list-style-type: none">Preventing and detecting financial crime and fraudCredit risk / decisionsVerification / security	<ul style="list-style-type: none">Pricing / insuranceRelationship managementAuto assistancePortfolio management
<ul style="list-style-type: none">Collection & recoveriesComplaints managementClaims management (insurance)Marketing	<ul style="list-style-type: none">RecruitmentHRCustomer communications e.g. chatbots



The five principles at a glance

Principle 1: Explainability & Transparency

Be transparent about how we use AAI and provide appropriate explanations on decisions

Principle 2: Integrity of AAI

Adopt appropriate controls for the integrity, sourcing and sharing of AAI and its associated data throughout the AAI lifecycle

Principle 3: Fairness & Alignment to Human Rights

Design and use AAI that produces fair outcomes

Principle 4: Contestability & Human Empowerment

Support the empowerment of AAI subjects, respecting their decision making

Principle 5: Responsibility & Accountability

Be responsible and accountable for our AAI



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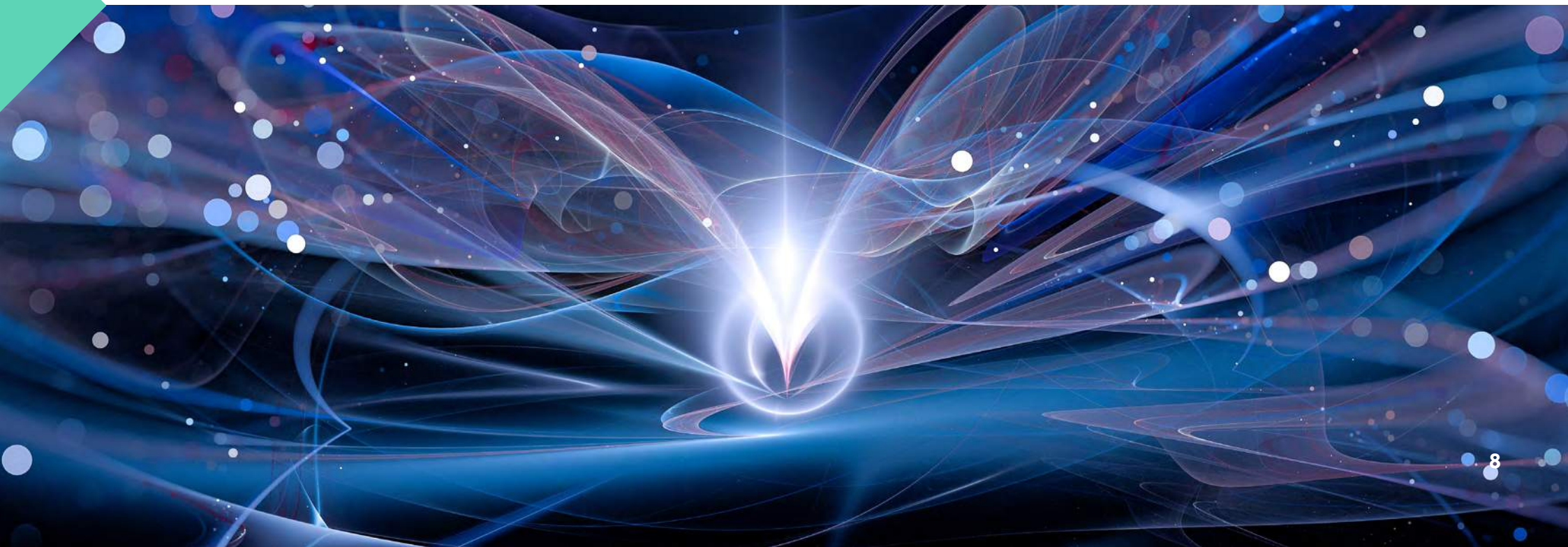
- We understand our AAI and the outputs they produce
- We develop and use AAI with inputs and outputs that are auditable at appropriate stages throughout its lifecycle
- We provide clear information and explanations appropriate to the audience, context and purpose



Principle 2: Integrity of AAI

Adopt appropriate controls for the integrity, sourcing and sharing of AAI and its associated data throughout the AAI lifecycle

- We employ data protection, security and resilience practices appropriate to the AAI use case and its level of risk
- We review and adapt our governance so that it meets evolving needs and has clear lines of accountability throughout the AAI lifecycle
- We maintain robust and appropriate risk management throughout the AAI lifecycle



Principle 3: Fairness & Alignment to Human Rights

Design and use AAAI that produces fair outcomes

- We define fairness within the context and purpose of the AAAI solution, and consider the impact on wider society
- We aim to understand and mitigate unfair bias in our development and use of AAAI
- We respect human rights in our development and use of AAAI



Principle 4: Contestability & Human Empowerment

Support the empowerment of AAI subjects, respecting their decision making

- We adopt measures that allow AAI subjects to challenge decisions made by AAI systems
- We have processes that allow for effective human review, oversight and control of AAI decisions and decision making
- We do not unfairly restrict AAI subjects' decision making
- We provide suitable options to our AAI subjects, where appropriate



Principle 5: Responsibility & Accountability

Be responsible and accountable for our AAAI

- We test and monitor our AAAI to ensure we meet regulatory and ethical standards
- We maintain policies that outline the scope of responsibility throughout the AAAI lifecycle
- We perform due diligence before engaging with partners and vendors
- We identify and balance competing requirements for AAAI
- We provide resources and training, appropriate to individuals' roles, so that we understand AAAI, its benefits and associated risks
- We encourage inclusive participation in the development of AAAI throughout its lifecycle





In addition to the assistance from KPMG, this paper was prepared with the input of the UK Finance Data Ethics Working Group. This group included, in particular, representatives from:

Aviva
Capital One
HSBC
Lloyds Banking Group
NatWest Group
Standard Chartered Bank
Visa

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