Recommendation of the Council on Artificial Intelligence

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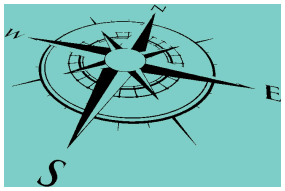

Organisation for Economic Co-operation and Development (OECD)

Stakeholder(s):

Council on Artificial Intelligence

Vision

Trustworthy AI

Mission

To promote principles for responsible stewardship of trustworthy AI

Values

Principles: the following principles are complementary and should be considered as a whole.

Inclusion: Inclusive growth, sustainable development and well-being -- Stakeholders should proactively engage in responsible stewardship of trustworthy AI in pursuit of beneficial outcomes for people and the planet, such as augmenting human capabilities and enhancing creativity, advancing inclusion of underrepresented populations, reducing economic, social, gender and other inequalities, and protecting natural environments, thus invigorating inclusive growth, sustainable development and well-being.

Growth

Sustainability

Well-Being

Human-Centricity: Human-centred values and fairness

Rule of Law: AI actors should respect the rule of law, human rights and democratic values, throughout the AI system lifecycle.

Human Rights

Democracy

Freedom: These include freedom, dignity and autonomy, privacy and data protection, non-discrimination and equality, diversity, fairness, social justice, and internationally recognised labour rights.

Dignity

Autonomy

Privacy

Data Protection

Non-Discrimination

Equality

Diversity

Fairness

Social Justice

Labour Rights

Mechanisms: To this end, AI actors should implement mechanisms and safeguards, such as capacity for human determination, that are appropriate to the context and consistent with the state of art.

Safeguards

Human Determination

State of Art

Transparency: Transparency and explainability -- AI Actors should commit to transparency and responsible disclosure regarding AI systems. To this end, they should provide meaningful information, appropriate to the context, and consistent with the state of art:

Explainability

Understanding: to foster a general understanding of AI systems

Awareness: to make stakeholders aware of their interactions with AI systems, including in the workplace

Outcomes: to enable those affected by an AI system to understand the outcome

Corrections: to enable those adversely affected by an AI system to challenge its outcome based on plain and easy-to-understand information on the factors, and the logic that served as the basis for the prediction, recommendation or decision

Robustness: AI systems should be robust, secure and safe throughout their entire lifecycle so that, in conditions of normal use, foreseeable use or misuse, or other adverse conditions, they function appropriately and do not pose unreasonable safety risk.

Security

Safety

Traceability: To this end, AI actors should ensure traceability, including in relation to datasets, processes and decisions made during the AI system lifecycle, to enable analysis of the AI system's outcomes and responses to inquiry, appropriate to the context and consistent with the state of art.

Risk Management: AI actors should, based on their roles, the context, and their ability to act, apply a systematic risk management approach to each phase of the AI system lifecycle on a continuous basis to address risks related to AI systems, including privacy, digital security, safety and bias.

Privacy

Fairness

Accountability: AI actors should be accountable for the proper functioning of AI systems and for the respect of the above principles, based on their roles, the context, and consistent with the state of art.

1. Investment

Invest in AI

1.1. R&D

Invest in AI research and development

Stakeholder(s):

Governments :

Governments should consider long-term public investment, and encourage private investment, in research and development, including interdisciplinary efforts, to spur innovation in trustworthy AI that focus on challenging technical issues and on AI-related social, legal and ethical implications and policy issues.

1.1.1. Technical Issues

Focus on challenging technical issues

1.1.2. Society, Legality & Ethics

Focus on AI-related social, legal and ethical issues

1.1.3. Policy Issues

Focus on AI-related policy issues

1.2. Datasets

Invest in open datasets

Stakeholder(s):

Governments :

Governments should also consider public investment and encourage private investment in open datasets that are representative and respect privacy and data protection to support an environment for AI research and development that is free of inappropriate bias and to improve interoperability and use of standards.

1.2.1. Bias

Ensure that AI research and development that is free of inappropriate bias

1.2.2. Standards & Interoperability

Use standards and improve interoperability

2. Digital Ecosystem

Foster a digital ecosystem for AI

Stakeholder(s)

Governments :
Governments should foster the development of, and access to, a digital ecosystem for trustworthy AI.

Such an ecosystem includes in particular digital technologies and infrastructure, and mechanisms for sharing AI knowledge, as appropriate. In this regard, governments should consider promoting mechanisms, such as data trusts, to support the safe, fair, legal and ethical sharing of data.

2.1. Knowledge

Sharing AI knowledge

2.2. Data

Promote the safe, fair, legal and ethical sharing of data

3. Policy

Shape an enabling policy environment for AI

3.1. Deployment

Support transition from the research and development stage to the deployment and operation stage for trustworthy AI systems

Stakeholder(s):

Governments :

Governments should promote a policy environment that supports an agile transition from the research and development stage to the deployment and operation stage for trustworthy AI systems. To this effect, they should consider using experimentation to provide a controlled environment in which AI systems can be tested, and scaled-up, as appropriate.

3.1.1. Experimentation

Provide a controlled environment in which AI systems can be tested and scaled-up

3.2. Assessment & Regulation

Adapt policy and regulatory frameworks and assessment mechanisms to encourage innovation and competition for trustworthy AI

Stakeholder(s):

Governments :

Governments should review and adapt, as appropriate, their policy and regulatory frameworks and assessment mechanisms as they apply to AI systems to encourage innovation and competition for trustworthy AI.

4. Workforce

Build human capacity and prepare for labour market transformation

4.1. Transformation

Prepare for the transformation of the world of work and of society

Stakeholder(s):

Governments :

Governments should work closely with stakeholders to prepare for the transformation of the world of work and of society. They should empower people to effectively use and interact with AI systems across the breadth of applications, including by equipping them with the necessary skills.

4.1.1. Empowerment

Equip people with skills to use and interact with AI systems

4.2. Fairness

Ensure a fair transition for workers as AI is deployed

Stakeholder(s):

Governments :

Governments should take steps, including through social dialogue, to ensure a fair transition for workers as AI is deployed, such as through training programmes along the working life, support for those affected by displacement, and access to new opportunities in the labour market.

Workers

4.2.1. Training

Offer training programmes along the working life

4.2.2. Displacement

Support for those affected by displacement

4.2.3. Labour Market

Provide access to new opportunities in the labour market

4.3. Collaboration

Work closely with stakeholders

Stakeholder(s):

Governments :
Governments should also work closely with stakeholders to promote the responsible use of AI at work, to enhance the safety of workers and the quality of jobs, to foster entrepreneurship and productivity, and aim to ensure that the benefits from AI are broadly and fairly shared.

4.3.1. Workplaces

Promote the responsible use of AI at work

4.3.2. Jobs

Enhance the safety of workers and the quality of jobs

Stakeholder(s):
Workers

4.3.3. Entrepreneurship & Productivity

Roster entrepreneurship and productivity

Stakeholder(s):
Entrepreneurs

4.3.4. Benefits

Ensure the benefits from AI are broadly and fairly shared

5. Co-Operation

Co-operate internationally for trustworthy AI

5.1. Principles & Progress

Co-operate to advance these principles and progress trustworthy AI

Stakeholder(s):

Governments :

Governments, including developing countries and with stakeholders, should actively co-operate to advance these principles and to progress on responsible stewardship of trustworthy AI.

Developing Countries

5.2. Knowledge

Foster sharing of AI knowledge

Stakeholder(s):

Governments :

Governments should work together in the OECD and other global and regional fora to foster the sharing of AI knowledge, as appropriate. They should encourage international, cross-sectoral and open multi-stakeholder initiatives to garner long-term expertise on AI.

5.2.1. Initiatives

Encourage international, cross-sectoral and open multi-stakeholder initiatives to garner long-term expertise on AI

5.3. Standards

Promote the development of technical standards for interoperable and trustworthy AI

Stakeholder(s):

Governments :

Governments should promote the development of multi-stakeholder, consensus-driven global technical standards for interoperable and trustworthy AI.

5.4. Metrics

Develop and use internationally comparable metrics to measure AI research, development and deployment

Stakeholder(s):

Governments :

Governments should also encourage the development, and their own use, of internationally comparable metrics to measure AI research, development and deployment, and gather the evidence base to assess progress in the implementation of these principles.

5.4.1. Evidence & Assessment

Gather evidence to assess progress in the implementation of these principles

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