Application and Limitations of AI in Taiwan: Research and Observations from the Taiwan Digital Governance Research Center (TEG)

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AI Researches in TEG

■Research from our team

- Artificial Intelligence Governance Framework for Governments (2024-2025)
- The Digital Competency and Open Badge System for Public Servants: A Case Study of Information Techno (2024-2025)
- Regulatory Adaptation and Legal Implementation for AI-Based Innovation in Taiwan’s Public Sector (2025-2026)
- Applications and Challenges of Generative AI in Public Services: A Service Design Study on User Behavior and Trust (2025-2026)

■Research from me

- Teammate or Liability? A Cross-Country Study on AI Development, Governance Differences, and Their Relationship to Corruption Control (2026-)
- A Cross-Country Analysis of the Correlation Between National AI Development and SDGs Progress (2026-)

Artificial Intelligence Risks

- **Data Governance**: Organizations such as the OECD, EU, MIT, Engstrom, G7, and UN have discussed frameworks for AI risk management and data governance, emphasizing elements such as data governance, transparency, and regulatory oversight.
- **Human Rights Protection**: The UN, EU, and G7 stress that AI should adhere to human rights principles, particularly in ensuring fairness, non-discrimination, and safeguarding the rights of vulnerable groups.
- **Ethics**: The OECD, EU, and G7 focus on the ethical responsibilities of AI technologies, addressing transparency, fairness, and balancing technological development with social impact.
- **Model Explainability**: The EU, OECD, and Engstrom highlight the importance of explainability in AI systems, especially in high-risk domains, to enable regulatory compliance and foster trust.
- **Personal Data**: The EU, UN, and G7 discuss privacy protection standards and regulations (such as GDPR) that AI must follow when processing personal data.
- **Automated Decision-Making**: The OECD, G7, and Engstrom examine the challenges of automated decision-making, particularly issues related to transparency, accountability, and its impact on individuals.

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Government AI Applications (40 GIDI+ Cases)

AI Application Type	Application Category	Title of Application Case	AI Technologies Used	Data Governance	Human Rights Protection	Ethics	Model Explainability	Privacy	Automated Decision-Making Risk
Execution	**Intelligent Recognition & Analysis**	5G Smart Patrol Service Analysis (National Police Agency, Ministry of the Interior)	Video Recognition	V	V	V	V	V	
		AR Helmet for First Responders – Integrated AI to Improve Response Efficiency (National Fire Agency, Ministry of the Interior)	Video Recognition	V	V		V	V	
		Automated Classification of Company Registration Document Images to Reduce Filing and Categorization Costs(Administration of Commerce. Ministry of Economic Affairs)	Video Recognition, Machine Learning	V			V	V	
		Vehicle License Plate Recognition – Smart Traffic Monitoring and Pollution Control (Environmental Management Administration, Ministry of Environment)	Video Recognition	V	V	V	V	V	V
		Smart Joint Port Management – Shipping Vessel Traffic Prediction and Scheduling Optimization	Video Recognition	V	V	V	V	V	V

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Government AI Applications (32 Government Service Award Cases)

AI Application Type	Application Category	Title of Application Case	AI Technologies Used	Data Governance	Human Rights Protection	Ethics	Model Explainability	Privacy	Automated Decision-Making Risk
Regulatory Analysis & Supervision	**Information Analysis Processes**	Taipei City Government, Department of Public Works – AI Sewer Pipe Inspection	Video Recognition	V			V		V
		Taichung City Government Construction Bureau – Smart Water Pipe Inspection	Machine Learning, Dynamic Video Analysis & Recognition	V			V		V
		Keelung City Fire Department – Intelligent Fire Rescue Application “Smart Firefighting 2.0”	Video Recognition	V	V			V	V

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Government AI Applications (28 Taipei City Government Cases)

AI Application Type	Application Category	Title of Application Case	AI Technologies Used	Data Governance	Human Rights Protection	Ethics	Model Explainability	Privacy	Automated Decision-Making Risk
Internal Management	**Internal Management Processes**	Emergency Disaster Response Cloud Coordination Platform (Taipei City Fire Department)	Machine Learning, Data Integration & Visualization	V			V		V
		Decision Support System (Taipei City Hospital)	Big Data Analysis	V	V	V	V	V	V
		Nursing Information System (Taipei City Hospital)	Big Data Analytics, ML, NLP	V	V	V	V	V	V

Research Conclusions and Recommendations

Plan

Establish AI governance frameworks and principles

- Build risk management mechanisms
- Define accountability and oversight systems
- Emphasize transparency mechanisms
- Develop measures to improve public understanding
- Implement talent development and awareness programs
- Create innovative accountability and collaboration models

Do

Deploy AI governance and management mechanisms

- Implement risk management measures
- Ensure transparency and openness
- Assign responsible entities (AOs)Promote collaboration between oversight and auditing bodies
- Establish ethical AI principles

Check

- Monitor AI system operations and impacts
- Monitor AI use cases
- Evaluate the effectiveness of risk management measures
- Regularly review AI policy and governance approaches
- Assess AI literacy among personnel

Action

- Adjust governance frameworks based on evaluation results
- Continuously update risk management measures
- Optimize transparency mechanisms to enhance public understanding
- Integrate government service processes with transparency improvements
- Continue talent cultivation and awareness enhancement

Other Governance Issues 1

- Six Gaps Among Government

  - ■Agencies Computational Power Gap
  - ■Data Resource Gap
  - ■AI Model Gap
  - ■Talent Gap
  - ■Regulatory Gap
  - ■Budget Gap
  - ■Data, Talent, Computing Power, and Algorithms Gap

Other Governance Issues 2

- Issues in Regulation, Innovation, and Service
  - AI Literacy
  - Sovereign AI
  - Fake AI Dividing Government Resources
  - Real AI Evading Government Oversight
  - Large Corporations' Intellectual Property Strategies
  - Hindering Innovation
  - Including AI Services in Joint Procurement Contracts

Future Research recommendations

- Establish Cross-Disciplinary AI Governance Collaboration Mechanisms
- Assess Government AI Applications and Risks
- Global Governance Frameworks and Taiwan’s International Engagement Strategy
- Public Trust and Policy Transparency in AI

Thank You for Your Attention