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## AN OVERVIEW OF SKILLS, ROLES, AND AI GOVERNANCE IN EU PUBLIC ADMINISTRATION

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**Abstract:** Artificial intelligence is increasingly integrated into public services across the European Union as administrations pursue digital transformation while facing rising legal, ethical, and operational expectations. This paper provides a review of recent five year policy and research sources, including publications from the European Commission, the Joint Research Centre, and the Organisation for Economic Co-operation and Development, in order to map the skills, roles, and governance arrangements needed for responsible adoption in public administration. The review follows a qualitative synthesis approach: core documents were selected for their relevance to public-sector deployment, regulatory implementation, workforce competence frameworks, and capacity-building initiatives, and were analysed to extract recurring governance functions, organisational responsibilities, and competency demands. The analysis outlines the Union’s governance architecture for artificial intelligence, with particular attention to the Artificial Intelligence Act, the European Commission’s coordinating structures, and the mechanisms that support coherent implementation across Member States. Building on competence frameworks developed for the public sector, the paper consolidates four domains of capability—technical, managerial, and legal and ethical—together with cross-cutting literacy, attitudinal, and operational proficiencies needed to design, plan, procure, deploy, monitor, and oversee artificial intelligence systems. On this basis, key role families are identified, including regulators and enforcement staff, ethics and compliance advisors, data and artificial intelligence officers, procurement and risk specialists, and digital transformation leads, and the hybrid skill profiles they require are characterised. The review also highlights capacity-building measures at Union and national levels, such as training programmes, interdisciplinary courses, and institutional support mechanisms aimed at improving literacy and strengthening oversight practices in day-to-day administration. The analysis suggests that implementation gaps persist where role definitions are unclear, governance responsibilities are fragmented, or training pathways are not aligned with operational needs. Therefore additional focus is needed on competency mapping by function, targeted training pathways for critical roles, iterative pilot projects with documented lessons learned, and stronger inter-agency coordination to ensure consistent governance across levels of government. Overall, effective adoption of artificial intelligence in European public administration depends on clear role allocation, cross-disciplinary competencies, and governance practices that evolve with technology, regulation, and public expectations.

**Keywords:** AI governance, EU AI Act, public administration, AI competencies and skills, digital transformation

### 1. INTRODUCTION

This analysis is based on a review of policy publications, reports, and expert commentary related to AI in European public administration. At the EU level, AI governance is anchored by the AI Act (European Parliament and Council of the European Union, 2024). The Act introduces a risk-based regulatory framework for AI systems, classifying certain high-risk applications and imposing obligations on providers and deployers. It complements earlier rules (GDPR, sectoral safety laws) and is intended to safeguard fundamental rights and trust in AI. The AI Act also establishes new bodies and processes within EU and Member State governments. In particular, the European AI Office housed in the Commission’s Directorate-General for Communications Networks (DG CNECT) serves as a center of AI expertise across the EU. Its mission is to enforce the AI Act (especially for general-purpose AI models), to develop evaluation tools and guidelines, and to foster an innovative ecosystem for trustworthy AI. The Office comprises specialized units and employs a blend of technology specialists, policy experts, and legal advisors. It works closely with the European Artificial Intelligence Board (AI Board), an advisory committee with representatives from each Member State. The AI Board’s purpose is to coordinate national regulators and advise on policy, ensuring coherent implementation of EU rules (European Commission, 2025b).

In addition to these central EU institutions, responsibility for AI governance is shared with Member States. Each Member State must designate one or more national authorities to enforce the AI Act at the local level, much like data protection authorities under GDPR. The European Commission has explicitly urged Member States to appoint such AI regulators as part of Act implementation (European Institute of Public Administration, 2024). Some countries are moving rapidly: for example, Poland has created a dedicated national AI agency to oversee the AI Act and promote innovation (OECD, 2024). Other EU initiatives complement the legal framework. The Coordinated

Plan on AI aligns Member States’ AI strategies and public investments, while programs like Digital Europe and Horizon Europe fund R&D and large-scale pilots (European Commission, 2021). The EU’s recent strategy and action plans emphasize building data infrastructures, stimulating AI adoption in key sectors, and strengthening AI skills and talent, including initiatives akin to an “AI Skills Academy”. Altogether, the governance context spans lawmaking (the Act), institutional setup (AI Office, Board), and capacity-building agendas that target public administrations.

This paper explores how the EU public administration plans to change. First it outlines current governance arrangements laws, institutions, and policies that shape AI in government. Next it identifies key roles within public agencies (both at the EU and national levels) that are emerging around AI oversight and implementation. Finally, it examines the skills and competencies needed for these roles, drawing on recent frameworks and examples of capacity-building. Our review analyzes policy documents and research by Medaglia et al. (2024) to provide a comprehensive overview. The goal is to show how EU governance innovations intersect with human capital needs in public administration, and to recommend ways to bridge remaining gaps.

## 2. MATERIALS AND METHODS

This paper applies a document-based review of recent European Union policy and research sources on public-sector artificial intelligence governance, skills, and roles. The reviewed material includes publications and web resources from the European Commission on the European approach to artificial intelligence and the establishment of governance bodies (European Commission, 2024, 2025a, 2025b), a Joint Research Centre competence framework for artificial intelligence in the public sector (Medaglia et al., 2024), and complementary evidence from the Organisation for Economic Co-operation and Development on government readiness (OECD, 2024), as well as practice-oriented materials on literacy and compliance preparations and capacity-building initiatives (European Institute of Public Administration, 2024; Sullivan-Paul, 2024). From these sources, statements about “who does what” in AI governance were extracted using a simple coding scheme that tagged (a) governance function (e.g., enforcement, procurement, operations), (b) role label (explicit or implied), and (c) competence type (technical, managerial, legal/ethical).

**Table 1. Key roles in EU public administration related to AI governance, with associated responsibilities and required competencies (European Commission, 2025a, 2025b).**

Role / Position	Level Organization	Key Responsibilities and Skills
European AI Office Specialist	EU Commission (DG CNECT)	Enforce AI Act (general-purpose AI), develop evaluation tools, draft guidance. <i>Skills:</i> AI technical knowledge, regulatory expertise, research analysis, policy drafting.
Member State AI Regulator	National government (appointed authority)	Oversee AI Act compliance in country (enforcement, guidance). <i>Skills:</i> Legal interpretation of AI Act, technical assessment of AI systems, coordination across ministries.
Policy / Ethics Advisor	National/EU (e.g., ministries, ethics boards)	Advise on societal impact of AI, develop ethical guidelines, engage stakeholders. <i>Skills:</i> AI literacy, ethics & law knowledge, communication, participatory facilitation.
Digital Transformation Officer	Local or national public administration	Lead integration of AI/digital tools in public services, manage change projects. <i>Skills:</i> Project management, stakeholder engagement, basic data/AI understanding, risk/impact assessment.
Data/AI Scientist (Govt)	Public agency (e.g., health dept, transport)	Design/deploy AI models and data analytics for policy or services. <i>Skills:</i> ML, data engineering, domain-specific knowledge, model auditing and validation.
Chief Data/AI Officer	Any large public organization	Coordinate AI strategy and data governance, ensure cross-department consistency. <i>Skills:</i> Strategic planning, leadership, data policy, ethics, monitoring outcomes.
Procurement / Legal Specialist	Public procurement office / legal dept	Draft AI procurement contracts, check compliance with AI regulations. <i>Skills:</i> Technical procurement knowledge, contract law, understanding of AI product requirements and standards.
Public Administrator / Policymaker	Government executives (ministers, directors)	Set AI strategy, allocate budgets, legislate or regulate. <i>Skills:</i> Broad AI awareness, strategic foresight, inter-department coordination, political leadership.

Source: Author’s own elaboration based on EU AI governance and public sector digital transformation literature (European Commission, 2022, 2024; European Union, 2024; OECD, 2019, 2021).

In addition, selected Member State and programme examples referenced in the literature were used to illustrate how governance and skills initiatives translate into practice, including emerging national regulator and agency arrangements and training programmes for civil servants. The analysis proceeded in three steps aligned with the paper's structure: (i) synthesising the governance arrangements that shape public-sector artificial intelligence (laws, institutions, and policy instruments), (ii) identifying recurring role categories involved in oversight and implementation at European Union and national levels (summarised in Table 1), and (iii) mapping required competencies for these roles using the Joint Research Centre domains (technical, managerial, and legal/ethical) together with the cross-cutting clusters (literacy, operational, and attitudinal) discussed in the reviewed sources. Overlaps across documents were treated as convergence: where different sources described similar functions (e.g., "AI officer," "digital lead," or "data officer"), they were consolidated into broader role families. Discrepancies were retained where they signalled different mandates (e.g., enforcement/regulatory roles versus service-delivery/implementation roles), and are reflected in the role descriptions rather than multiplied as separate categories.

### 3. RESULTS

Whatever the specific role, EU public-sector employees need a mix of technical, managerial, and policy/legal competencies to handle AI responsibly. The JRC study on AI in the public sector identifies three core competency areas, each supplemented by cross-cutting clusters:

- Technical Competences: Data science and engineering skills (e.g., machine learning, data analysis, algorithm design), as well as the ability to evaluate and audit AI systems. Public managers with technical competence can critically assess an AI tool's reliability, explainability, and safety.
- Managerial Competences: Project and change management, stakeholder engagement, and leadership in innovation projects. For AI initiatives, managers must plan pilots, allocate resources, and drive inter-agency coordination. They also need skills in procurement and vendor management, since many governments acquire AI solutions externally.
- Policy/Legal/Ethical Competences: Understanding AI's societal and legal implications. Examples include conducting AI impact assessments, ensuring GDPR and fundamental rights compliance, and upholding transparency and accountability. Officials must be able to interpret the AI Act's requirements for high-risk systems and to embed ethical values in decision-making.

These three dimensions intersect with three "competency clusters":

- Literacy (Know-What): A foundational understanding of AI concepts, terminology, capabilities, and limitations. For public servants, this means grasping how AI models work in principle, what data they use, and what risks (e.g., bias, opacity) they might carry. EU guidance and commentary increasingly call for AI literacy for staff using or deploying AI systems.
- Operational (Know-How): Practical skills to apply or evaluate AI systems. This includes technical tasks like setting up a data pipeline, running experiments, or implementing monitoring procedures. It also covers skills such as auditing an AI model for fairness or conducting a security review.
- Attitudinal (Know-Why): Values and mindsets, such as openness to innovation, ethical commitment, and the motivation to use AI for the public good. Since public trust is at stake, officials need an ethical mindset and a "people-first" orientation when deploying AI.

To illustrate, consider a hypothetical government unit adopting an AI-based citizen chatbot. A data scientist (technical role) must ensure the NLP model is trained on appropriate data and is accurate (technical and operational competencies). A project manager (managerial role) must plan the rollout, train staff, and update protocols. An ethics advisor or legal officer must verify that the chatbot meets transparency and non-discrimination standards (legal/ethical competency). Underlying all, each needs basic AI literacy to communicate and collaborate effectively. Achieving the needed competences involves both formal and informal learning. Formal measures include training courses, certifications, and academic partnerships. For example, the European Institute of Public Administration (EIPA) has launched workshops on the AI Act's risk-based approach and offers interdisciplinary AI courses focused on trustworthiness and accountability (European Institute of Public Administration, 2024). National governments have sponsored large-scale programs: Greece's AI for All train-the-trainer initiative (with Google and public administration institutes) shows how inter-institutional collaboration can scale AI literacy (Panagopoulos, 2024). By 2024, over 1,000 Greek officials had completed AI training workshops, spanning both basic AI concepts and leadership in the digital age. Other countries (e.g., Estonia, Finland) are known to provide AI and data-science courses for civil servants through partnerships with universities and tech hubs.

Recognizing the skill challenge, both the EU and Member States have launched capacity-building initiatives. At the EU level, strategy documents and action plans emphasize pooling resources and curricula for AI training across the

Union, with initiatives akin to an AI Skills Academy (European Commission, 2025). The EU Digital Skills and Jobs Platform highlight national “good practices” and suggests these be replicated. EU-funded projects (e.g., under Horizon Europe, Digital Europe, Recovery and Resilience Funds) support training civil servants in cloud computing, cybersecurity, and AI use cases (European Commission, 2025a). For example, Romania has undertaken a program to train tens of thousands of civil servants in advanced digital skills (with modules on leadership in digitization). Similar schemes are underway in other Member States, often with help from European Digital Innovation Hubs that provide guidance on technology adoption (European Commission n.d.).

#### 4. DISCUSSIONS

Despite these developments, several challenges persist. First, the pace of AI change far outstrips institutional learning curves. Many public servants simply lack time or incentives to reskill. Surveys indicate a gap between the “AI skills they have and are looking for” in government workforces. Without a clear skills strategy, hiring, retraining, and career paths for AI-competent staff may lag needs. Second, governance fragmentation is a risk. With multiple agencies involved (e.g., data protection, AI Office, industry regulators), consistent oversight is complex. The newly created AI Board helps, but coordinating across 27 Member States remains a heavy lift. Third, some experts warn that citizen engagement is under-emphasized (Aaronson, 2025): AI governance often focuses on technical safeguards, whereas public trust may hinge on transparency, participation, and accountability mechanisms areas currently under-developed in many frameworks.

Another challenge is in integrating existing legal frameworks. Public agencies need standard operating procedures for classifying and registering high-risk systems. Procurement is another hurdle: many governments lack clear guidelines for buying AI products. Furthermore, internal resistance can slow adoption if staff fear job losses or liability (especially without training to understand AI).

To address these issues, literature proposes several recommendations:

- Competency Mapping and Role Definition: Public organizations should audit their current AI-related roles and skills (a “training needs analysis”) and then tailor hiring and training accordingly. For example, identifying which departments will use high-risk AI and ensuring each has qualified oversight staff (European Parliament and Council of the European Union, 2024).
- Targeted Training Programs: Expand specialized training for critical roles. This includes courses for AI regulators on compliance procedures, for ethics officers on conducting AI impact assessments, and for project managers on agile procurement of AI (European Institute of Public Administration, 2024).
- Pilot Projects and Learning-by-Doing: Encourage departments to launch small-scale AI pilots under expert supervision. These projects build internal expertise and generate case studies on what works. Lessons should be documented in a best-practices repository shared EU-wide (European Commission, 2021).
- Governance Structures: Create or strengthen cross-cutting AI committees/units in each administration. Such bodies can unify strategy, avoid siloed efforts, and coordinate training. For instance, a national AI committee could include tech, legal, and civil society representatives to oversee public AI deployments (OECD, 2024).
- EU-wide Coordination and Knowledge-Sharing: The European Commission and AI Board should facilitate regular exchanges among Member States. Joint forums (e.g., an AI governance network) could allow countries to compare frameworks, skill frameworks, and regulatory approaches (OECD, 2025; European Commission, 2021).
- Inclusive Approaches: Build participatory elements into AI governance. This might involve public consultations on high-impact AI projects, or mandatory reporting of AI use to transparency portals. Including citizens and stakeholders will enhance trust and help administrators gauge public values to encode into AI solutions (Aaronson, 2025).

By following these steps, EU public administration can make AI governance more systematic. The literature underscores that people and processes are as crucial as technology itself in AI governance. In practice, this means staffing agencies with hybrid experts, codifying ethical review processes, and continuously upskilling the workforce. Analyses emphasize that the EU’s strong regulatory framework (AI Act) is only the foundation the real success will come from embedding AI literacy and responsibilities throughout government.

#### 5. CONCLUSIONS

AI is poised to reshape how the EU public sector operates, but this depends on human capacity and governance as much as on algorithms. EU institutions and Member States are taking major steps: pioneering rules (the AI Act), dedicated organizations (AI Office, national agencies), and skill-building initiatives (training programs, academies). Our review highlights that achieving trustworthy, effective AI in government requires clear roles (from regulators to

technicians) and a broad spectrum of skills (technical, managerial, ethical). The European Commission's JRC report by Medaglia et al. (2024) provides a concrete competence framework capturing this diversity, and Member State examples (e.g., Poland's AI agency, Greece's AI training program) show how policy translates to practice.

However, challenges remain. AI literacy is uneven across departments, and existing governance structures must mature to keep pace. Sustainable AI adoption will rest on continuous learning-by-doing and on integrating AI oversight into everyday public-sector practices. We therefore urge EU and national governments to commit to interdisciplinary training, to formalize AI roles in civil service, and to engage society in co-governance of AI. Such efforts will ensure that AI serves the public interest enhancing efficiency and quality of services while upholding the EU's values of transparency, fairness, and accountability.

In sum, governance and skills are twin pillars of AI readiness in European public administration. If both are developed in concert through coordinated policies, well-trained personnel, and forward-looking institutions the EU can realize the promise of AI in government while safeguarding public trust and rights.

#### **DISCLAIMER**

The views expressed in this article are purely those of the authors and may not, under any circumstances, be regarded as an official position of the European Commission.

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