

**Technology Career Pathways Beyond Education:  
Ten Positions, Structures, and Preparation**

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EDTC 8089086: Jobs Project

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August 2, 2026

Technology work no longer belongs to a single department or a single career ladder. Hospitals, state health agencies, banks, product companies, and consulting firms all employ people whose central contribution is making information systems work for the humans who depend on them. This paper profiles ten technology positions outside the field of education, describing what each role does, where it likely sits in an organizational hierarchy, and what preparation makes an applicant competitive.

Duties, entry-level education, wage medians, and ten-year projections come from the U.S. Bureau of Labor Statistics Occupational Outlook Handbook, supplemented by association credentialing requirements and forecasting from the World Economic Forum (2025). A reflection follows on the patterns that emerged across the ten roles, the fields of greatest personal interest, and a plan for becoming a strong candidate.

### **Ten Technology Positions Outside of Education**

The ten positions discussed below span distinct sectors rather than variations of one job family. Reporting structures are representative composites, since lines of authority vary by organization size. Wage figures are May 2024 medians and growth figures are 2024–34 projections.

#### ***Clinical Informatics Analyst: Healthcare***

The clinical informatics analyst translates clinical practice into system design. The work involves configuring electronic health record workflows, building decision support rules, validating clinical data, training end users, and analyzing system use to improve patient safety. In most hospitals the position reports to a Director of Clinical Informatics, who reports in turn to a Chief Medical or Nursing Informatics Officer and then to the Chief Information Officer, usually with a dotted line to nursing and quality leadership. Entry requires a bachelor's degree, and a

clinical or health sciences background is strongly preferred because the role depends on recognizing when a workflow is being described inaccurately. Competitive applicants add vendor electronic health record certification, SQL, workflow analysis, and fluency with the Health Insurance Portability and Accountability Act. The median wage is \$67,310 with 15% projected growth (U.S. Bureau of Labor Statistics, 2025d).

***Public Health Informatics Analyst: Government and Public Health***

The public health informatics analyst maintains the disease surveillance systems and registries on which population health decisions depend. Responsibilities include managing electronic case reporting, maintaining interoperability with hospital systems, linking population data sets, and building dashboards that inform policy. The position typically reports to an Informatics Manager, then to a Director of Epidemiology and Surveillance and ultimately to a State Health Officer, though grant-funded roles also report to a federal project officer. A bachelor's degree is the minimum, with a Master of Public Health or a master's in health informatics preferred. The technical profile includes SQL, R or Python, the HL7 and FHIR interoperability standards, data governance, and epidemiologic reasoning.

***Information Security Analyst: Financial Services and Corporate***

The information security analyst owns an organization's defensive posture. The role sets access and encryption standards, watches network traffic for anomalies, leads containment when an incident occurs, drives patching in cooperation with system owners, and keeps continuity plans tested. Reporting runs from a Security Operations Manager to a Director of Information Security, then to a Chief Information Security Officer and often to a Chief Risk Officer; the function is frequently kept structurally independent of information technology operations. Applicants need a bachelor's degree and typically a credential such as Security+, CISSP, or

CISM, together with networking, cloud security, scripting, incident response, and regulatory literacy. The median wage is \$124,910 with 29% projected growth, among the fastest of all occupations (U.S. Bureau of Labor Statistics, 2025e).

### ***Data Scientist: Corporate and Technology***

The data scientist reframes business questions as analytical problems. The work includes building and validating predictive and machine learning models, monitoring model performance after deployment, and communicating findings to leaders without technical backgrounds.

Reporting typically runs from an Analytics Manager to a Director of Data Science and then to a Chief Data Officer, although data scientists are frequently embedded in a product or marketing team through matrix reporting. Employers expect a bachelor's degree in mathematics, statistics, or computer science, and many prefer a graduate degree, along with Python or R, SQL, experimental design, cloud platforms, and the ability to tell a story with data. The median wage is \$112,590 with 34% projected growth, the fastest rate among the ten positions examined here (U.S. Bureau of Labor Statistics, 2025c).

### ***Information Technology Director: Corporate***

The information technology director sets technology strategy and directs infrastructure, applications, and security across an organization. The role builds and defends budgets, negotiates vendor contracts, develops technical staff, and aligns the technology roadmap with organizational goals. Directors report to a Chief Information Officer, Chief Operating Officer, or Chief Executive Officer, and supervise the managers responsible for infrastructure, applications, the service desk, and security. Preparation requires a bachelor's degree plus five or more years of experience, with a Master of Business Administration or a master's in information systems common at this level, alongside financial management, negotiation, governance frameworks, and

change leadership. The median wage is \$171,200 with 15% projected growth (U.S. Bureau of Labor Statistics, 2025a).

***Cloud Solutions Architect: Technology and Enterprise Information Technology***

The cloud solutions architect determines the shape of a platform before any code is written. The role chooses cloud services and integration patterns, fixes identity and resilience boundaries, models running cost, and publishes the standards that delivery teams build against. Architects usually report to a Director of Enterprise Architecture and then to a Chief Technology Officer, and they guide delivery teams through influence rather than direct supervision. The position requires a bachelor's degree plus substantial engineering experience and an architect certification from Amazon Web Services, Microsoft Azure, or Google Cloud, together with security by design, infrastructure as code, and cost governance. The comparable Bureau of Labor Statistics category, computer network architects, reports a median wage of \$130,390 (U.S. Bureau of Labor Statistics, 2025b).

***User Experience Researcher: Consumer Technology and Product***

The user experience researcher plans and conducts usability tests, interviews, and surveys, synthesizes the evidence into design requirements, and measures whether released designs actually improved user outcomes. Reporting runs from a Research Lead to a Director of Product or Head of Design and then to a Chief Product Officer, with lateral partnership across designers, product managers, and engineers. A bachelor's degree is expected, and backgrounds in psychology, human-computer interaction, or human factors are common, supported by mixed-methods design, accessibility standards, prototyping, and statistical literacy. This is one of the few roles examined here in which a portfolio of completed research often outweighs formal

credentials. The nearest Bureau of Labor Statistics category, web developers and digital designers, reports a median wage of \$95,380 (U.S. Bureau of Labor Statistics, 2025b).

***Artificial Intelligence Governance Analyst: Corporate Compliance and Policy***

The artificial intelligence governance analyst is an emerging role created by the rapid deployment of machine learning systems into consequential decisions. The analyst inventories deployed systems, conducts risk and bias assessments, maps controls to frameworks such as the National Institute of Standards and Technology Artificial Intelligence Risk Management Framework, and coordinates human oversight requirements. Reporting runs to a Director of AI Governance and then to a Chief Compliance Officer, Chief Privacy Officer, or General Counsel, and the analyst normally holds standing membership on a cross-functional review board. A bachelor's degree is required, with graduate study in law, policy, ethics, or information science common, alongside risk assessment, policy writing, and working fluency in machine learning. The role is not yet a distinct Bureau of Labor Statistics occupation, although artificial intelligence skills lead global demand (World Economic Forum, 2025).

***Technical Writer: Technology and Manufacturing***

The technical writer serves as the durable memory of a product. The work involves interviewing engineers, converting what they know into operating procedures, interface references, and help content, and enforcing a single vocabulary across successive releases. Writers report to a Documentation Manager and then to a Director of Product Content or Engineering and a Chief Technology Officer, with matrixed accountability to individual release teams. Preparation requires a bachelor's degree plus subject-matter knowledge, structured authoring, version control, information architecture, and editorial precision. The median wage is

\$91,670, but projected growth is only 1%, the lowest among the positions examined here (U.S. Bureau of Labor Statistics, 2025g).

### ***Information Technology Project Manager: Consulting and Corporate***

The information technology project manager holds a technology initiative to its commitments. The role negotiates what is in and out of scope, sequences work across internal teams and vendors, adjudicates change requests, and gives sponsors an unvarnished status picture. Project managers report to a Project Management Office Director and then to a Chief Information Officer or Vice President of Operations, remaining accountable to an executive sponsor who owns the business outcome; in consulting the reporting line runs to an engagement partner. Applicants need a bachelor's degree and typically a credential such as the Project Management Professional, Certified Associate in Project Management, or an agile credential such as PMI-ACP, together with budgeting, negotiation, scheduling tools, and disciplined written and verbal communication. The median wage is \$100,750 with 6% projected growth (U.S. Bureau of Labor Statistics, 2025f).

### **Reflection**

Three findings reshaped how I understand technology careers. First, the entry gate is wider than I expected. At least half of these roles are commonly filled by people whose original training was in a domain such as nursing, epidemiology, law, or psychology, with technical skill layered on afterward. Employers hiring a clinical informatics analyst want someone who has stood at a bedside and can tell when a workflow is being described inaccurately.

Second, reporting lines encode organizational trust. Security and artificial intelligence governance functions sit deliberately outside the operations they evaluate, reporting through risk, compliance, or legal channels rather than through the Chief Information Officer alone. The

reason is straightforward: A reviewer who reports to the person being reviewed eventually stops reporting problems.

Third, growth rates diverge sharply within a single field. Data science is projected to grow 34% and information security 29% through 2034, while technical writing is projected to grow 1% (U.S. Bureau of Labor Statistics, 2025c, 2025e, 2025g). Proximity to technology does not create demand; scarcity of a specific skill does. Yet the World Economic Forum (2025) found that while artificial intelligence and cybersecurity skills rise fastest, analytical thinking, resilience, leadership, and continuous learning remain among the capabilities employers value most.

Credential pathways also proved less interchangeable than they appear. The American Health Information Management Association (n.d.) restricts eligibility for its Registered Health Information Administrator examination to graduates of accredited health information management programs and does not accept health informatics degrees, while the American Medical Informatics Association (n.d.-b) requires a graduate degree plus qualifying informatics experience. Choosing a program before checking eligibility rules would be an expensive mistake.

### **Fields and Positions of Greatest Interest**

Healthcare informatics interests me most, with the clinical informatics analyst role as an entry point and a director-level informatics position as a longer-term target. The appeal is that the work is fundamentally instructional. When an electronic health record implementation fails, the cause is rarely the software; it is that clinicians were handed a new system without the training, workflow redesign, and feedback loops that adoption requires.

That is a learning-design problem inside a technology project, precisely where a health sciences background and doctoral study in educational technology leadership converge. The

stakes are also concrete: Configuration decisions determine whether an allergy alert fires before a medication is administered.

My second interest is artificial intelligence governance, in either a corporate compliance or a policy setting. It attracts me because the field is unsettled, with no dedicated occupational classification, credentials only now emerging, and practitioners still negotiating the scope of the work, so a newcomer can help define practice rather than inherit it. The core competency is also familiar: Translating technical capability into language that governing bodies and the public can act on is work I already do.

By contrast, I would not pursue solutions architecture or software engineering. Those roles draw their authority from a decade of hands-on engineering depth, and recognizing where I would be disadvantaged is as useful as knowing where I would be strong.

### **Becoming a Strong Candidate**

An honest inventory shows both assets and gaps. I bring adult learning theory, needs assessment, program evaluation, stakeholder facilitation, and clear writing for mixed audiences. I lack demonstrable technical fluency and any informatics credential. Six actions would close that distance.

First, build technical depth deliberately rather than broadly by completing graduate coursework or a certificate in health informatics covering interoperability standards, clinical terminologies, and database querying, and by becoming genuinely competent in SQL and one visualization platform rather than superficially acquainted with several. Second, verify the credential route before enrolling anywhere by requesting an eligibility review from the American Medical Informatics Association (n.d.-a), whose certification is built for professionals arriving from applied fields such as nursing and public health.

Third, produce evidence rather than coursework: A workflow analysis with before-and-after measures, a dashboard built on publicly available health data, and a written implementation and training plan for a clinical system change would all serve. Hiring managers ask what I have built, not what I have studied. Fourth, earn a project management credential, since nearly every position discussed above is delivered as a project.

Fifth, enter the professional community by joining informatics associations, attending a national meeting, conducting informational interviews with practicing informatics leaders, and volunteering for a committee or grant-funded surveillance project, where the work itself becomes the reference. Sixth, translate my language: A résumé describing curriculum, assessment, and instruction reads as education experience, while the same work described as training program design, evaluation and quality measurement, and end-user adoption reads as informatics experience. Executed with discipline, this is an 18- to 24-month transition rather than a restart.

## **Conclusion**

These ten positions reveal a labor market that rewards people who can move between a technical system and the people who use it. Reporting structures show where an organization places independence, and divergent growth projections show that adjacency to technology is not the same as demand for a skill. For a candidate arriving from health sciences and education, the credible route forward is targeted technical depth, a verified credential pathway, portfolio evidence, and language the receiving field recognizes.

## References

- American Health Information Management Association. (n.d.). *Registered health information administrator (RHIA)*. <https://www.ahima.org/certification-careers/certifications-overview/rhia/>
- American Medical Informatics Association. (n.d.-a). *AMIA health informatics certification (AHIC)*. <https://amia.org/careers-certifications-informatics/amia-health-informatics-certification-ahic>
- American Medical Informatics Association. (n.d.-b). *Eligibility requirements for AMIA health informatics certification (AHIC)*. <https://amia.org/careers-certifications-informatics/amia-health-informatics-certification-ahic/eligibility>
- U.S. Bureau of Labor Statistics. (2025a). Computer and information systems managers. In *Occupational outlook handbook*. U.S. Department of Labor. <https://www.bls.gov/ooh/management/computer-and-information-systems-managers.htm>
- U.S. Bureau of Labor Statistics. (2025b). Computer and information technology occupations. In *Occupational outlook handbook*. U.S. Department of Labor. <https://www.bls.gov/ooh/computer-and-information-technology/>
- U.S. Bureau of Labor Statistics. (2025c). Data scientists. In *Occupational outlook handbook*. U.S. Department of Labor. <https://www.bls.gov/ooh/math/data-scientists.htm>
- U.S. Bureau of Labor Statistics. (2025d). Health information technologists and medical registrars. In *Occupational outlook handbook*. U.S. Department of Labor. <https://www.bls.gov/ooh/healthcare/health-information-technologists-and-medical-registrars.htm>

U.S. Bureau of Labor Statistics. (2025e). Information security analysts. In *Occupational outlook handbook*. U.S. Department of Labor. <https://www.bls.gov/ooh/computer-and-information-technology/information-security-analysts.htm>

U.S. Bureau of Labor Statistics. (2025f). Project management specialists. In *Occupational outlook handbook*. U.S. Department of Labor. <https://www.bls.gov/ooh/business-and-financial/project-management-specialists.htm>

U.S. Bureau of Labor Statistics. (2025g). Technical writers. In *Occupational outlook handbook*. U.S. Department of Labor. <https://www.bls.gov/ooh/media-and-communication/technical-writers.htm>

World Economic Forum. (2025). *The future of jobs report 2025*. <https://www.weforum.org/publications/the-future-of-jobs-report-2025/>