

Software engineer

Skills Framework track

Software and applications

Job function

Engineering and tech.

Job family

Software engineer

Sub-sectors

Retail banking, corporate banking, investment banking, private banking and wealth management, asset management, insurance

Expected augmentation by Gen AI

Do more: Gen AI could automate the creation of software requirement specifications and technical documentation, generate test cases and scenarios, and perform static code analysis to identify design flaws and security vulnerabilities. Gen AI tools can also streamline threat modeling, code refactoring, and code reviews, while also assisting in the generation of detailed audit reports, thereby improving efficiency, accuracy, and overall software quality

Key tasks that can benefit from Gen AI

Critical work functions	Key tasks
Analyse user and business requirements	Formulate software requirement specifications
	Translate user requirements into technical specifications
Oversee software testing	Specify test cases for the selected testing technique
	Design the test environment and test case scenarios
	Analyze defect arrival rate and failure intensity data
	Design software test plan and criteria for regression testing
Manage the design of software	Lead static analysis tasks to evaluate design quality
	Determine design alternatives and perform trade-off analysis
	Develop and use simulation and prototypes to evaluate software design quality
Oversee security provisions in software	Establish project coding standards to avoid security vulnerabilities
	Identify security risks and create requirements to capture security issues
	Model threats and associated risks of new and modified systems
	Perform initial threat modeling
Manage software construction processes	Perform code re-factoring
	Lead code reviews and inspections
	Review detailed designs and code to ensure quality requirements are met
	Assist in the selection of processes, models, languages, and tools for software construction
Manage software management configuration (SCM)	Develop and tailor tools for generating SCM audit reports
	Develop and maintain the SCM plan

1. Transferrable skills with an increase in one level of proficiency is considered easier to acquire than transferable skills with multiple levels of increase in proficiency, followed by net new additional skills. Depending on job redesign for the financial institution, the financial institution will have to pick select skills to reskill employees on, via a combination of on-the-job training and existing courses.

Source: SkillsFuture Skills Framework

Proficiency level

- X New Gen AI skills
- X Transferrable skills at the same proficiency level
- X New skills
- X Transferrable skills at a higher proficiency level¹

New Gen AI skills

Prompt design	3
Gen AI principles and applications	3
Gen AI model selection	2
Gen AI model evaluation	2
Gen AI application development and deployment	2
Gen AI model development and fine tuning	2
Responsible AI and Gen AI practices	2
Gen AI models technical aspects of security and ethics	2
Prompt engineering	2

Potential next-seniority level (software engineering manager or software architect) skills to acquire

Solution architecture	4	Business risk management	4	Manpower planning	3
User interface design	4	Change management	4	People and performance management	3
Business needs analysis	4	Configuration tracking	4	Strategy implementation	3
Business requirements mapping	4	Data design	4	Agile coaching	4
Project management	5	Performance management	5	Agile software development	4
Stakeholder management	5	Problem management	4	Networking	4
Emerging technology synthesis	5	Quality standards	5	Project feasibility assessment	4
Product management	5	Software configuration	4	Organizational analysis	4
Applications development	5	Software design	5	Vendor management	4
Applications integration	5	Software testing	4	Continuous integration and continuous deployment	5
Applications support and enhancement	4	System integration	4	Business innovation	5
Budgeting	4	Test planning	4	Service-level management	5

DO MORE