CODING THE FUTURE OF FINANCE:

General Assembly's Software Engineer Training & Hiring Solutions Clear the Path to Modernization in 2024

Over 90% of financial institutions and insurers are in the midst of modernization — up from 37% just three years ago. This migration from legacy operating systems to cloud-based platforms such as Amazon and Azure is driven by urgent and unending demands for speed, flexibility, compliance, and innovation.

"What 'new' looks like today might look very different months down the line," explains Ciaran Moloney, VP of Solutions at General Assembly. "Look at generative AI, for example — you could argue that was something that wasn't in our lexicon a year ago, but it's rapidly evolved into something that will impact enterprises to an exponential degree in the coming years. You're always going to be playing catch-up to some degree — and the challenge will always be: How do we evolve our skills, capabilities, and competencies to keep pace?"

Successfully upgrading to cloud infrastructure requires robust teams of software engineers with the right breadth and depth of skills. At the same time, the software engineering talent gap grows more profound, as industries compete for a limited candidate pool and procurement costs scale upward.

Here's what we know: Future-ready teams are needed in finance to keep skills, competencies, and capabilities fresh. Leading financial institutions are harnessing internal potential and leveraging external resources to implement the essential changes the increasingly competitive and tech-savvy landscape demands.

In this piece, we cover:

- The evolving market for software engineers in finance and the technical skills they need.
- A three-pronged approach to filling skills gaps and talent shortages.
- How General Assembly has helped financial institutions solve these challenges.

THE EVOLVING SOFTWARE ENGINEERING NEEDS OF THE FINANCE & BANKING SECTOR IN 2024

What Does Best Practice Software Engineering Look Like in Financial Services?

As technology rapidly evolves, so do the skill sets and roles required to bring products to market quickly, mitigate risks, and gain competitive advantage. Like trying to balance a towering stack of plates in an earthquake, it can feel like a daunting task to get the right set of talent, skills, and technologies in place when the ground is perpetually shifting.

At the same time, we see many traditional finance roles — bank teller, data entry specialist, credit scorer, risk assessor, transaction processor, and customer service rep — evolving as AI advancements continue to come into focus.

Meanwhile, a number of roles have become more technical and specialized in order for professionals to excel at solving complex organizational challenges. For example:

- **Financial analysts and risk managers** are learning programming languages like Python so they can manipulate, analyze, and model large data sets.
- **Compliance officers** are beginning to understand data encryption, monitoring tools, and cybersecurity protocols to meet evolving industry standards and regulatory requirements.
- **Loan officers** are increasing their technical literacy to interpret and leverage data generated by automated underwriting systems for effective decision-making.
- **Software engineers** are learning how to streamline and secure transactions using blockchain technology, harnessing cloud computing and containerization to ensure agile software development processes that scale and adapt, and developing big data tools that help analysts extract insights for optimizing operational efficiency.

While all of this is taking place, the financial sector is releasing apps, tools, digital wallets, investment platforms, and web portals at a competitive clip. With artificial intelligence, blockchain, and predictive modeling driving new levels of efficiency, the **software engineer** is riding shotgun, as one of the 10 most sought-after roles in finance. In fact, 96% of financial service CIOs state software engineering is either "critical" or "very important" to their organization's future. It's not hard to see why — software engineers play a pivotal role in leveraging data for personalization and stronger customer engagement, building cutting-edge tech stacks that reduce cost and speed up innovation and using agile operating models to respond to fast-changing markets.

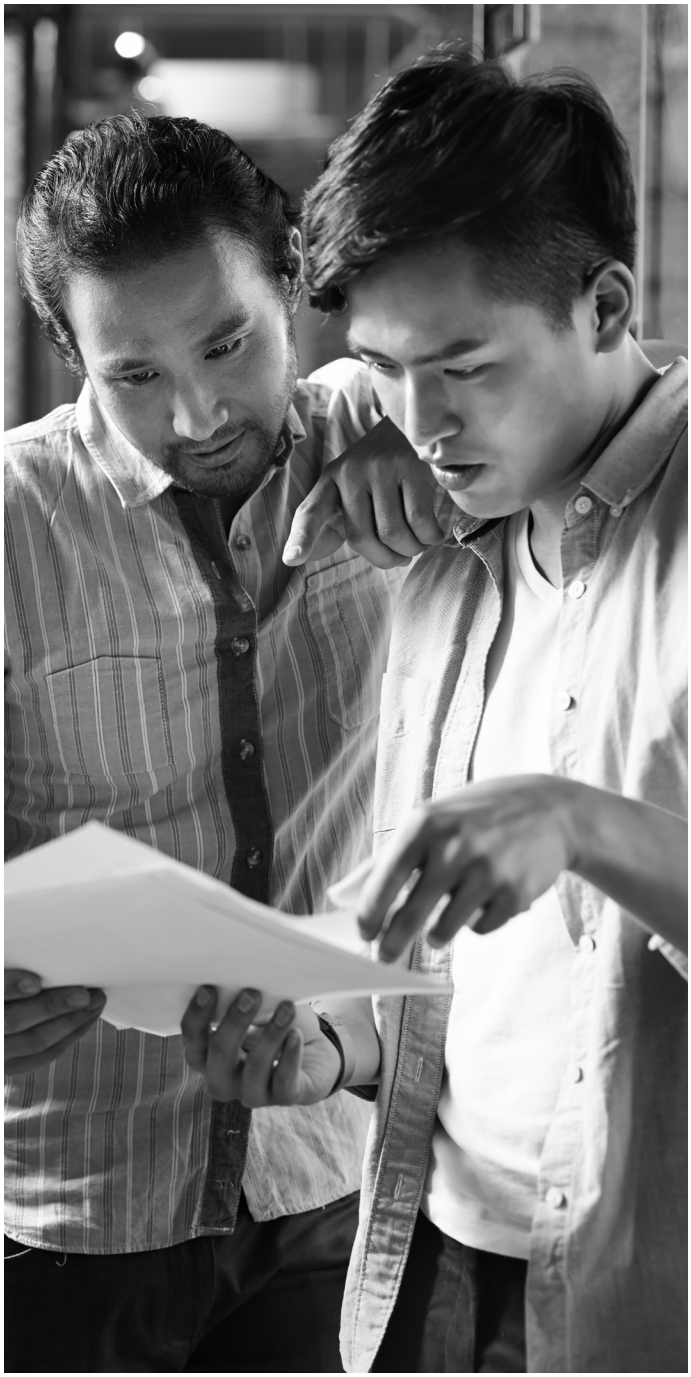
To keep pace with these mounting demands, strong technical teamwork is essential. A software engineer in the financial sector will need to be an expert in distributed documentation to ensure all team members can collaborate and maintain compliant code. Further, software engineers will increasingly require training in test-driven development so they're able to identify early risks and stay one step ahead of regulators. Continuous integration skills will prepare them to pivot with market changes, security concerns, and calls for cost reduction — which are par for the course in an industry built by minding every dollar and cent.

Recognizing that "future-ready teams create future-ready solutions," finance leaders are top investors in disruptive tech skills training. With the right training and support, software engineers can dive as deeply as they desire in any number of relevant subtopics.

FINANCE INDUSTRY SOFTWARE ENGINEERING SKILLS TO FUTURE-PROOF YOUR INSTITUTION

Today, well-trained software engineers study a rigorous curriculum that likely includes:

- **Developer workflow tools** (like Git and JIRA)
- **Web development frameworks** (like React and Django)
- **Programming languages** (like Python and Java)
- **Compliance databases** (like MongoDB and Oracle)
- **Containerization solutions** (like Kubernetes or Docker)
- **Testing methods** (like Unit, Integration, and System)
- **DevOps principles** (like pipeline development or automation and testing)
- **Microservices architecture** (for CRM or payment processing)
- **Cloud services** (like Google Cloud Platform, Microsoft Azure, or Amazon Web Services)
- **Artificial intelligence techniques** (like generative AI, machine learning, and robotic process automations)



Long gone are the days where software engineers are hired for one niche project and that's that. The difference between "scarcely surviving" versus "innovating and thriving" can be found in the top financial institutions that develop highly skilled T-shaped teams, consisting of software engineers with both the breadth and depth of training to serve critical needs across projects.

It may sound like a tall order, but most financial institutions rely on a mix of resources from brick-and-mortar academia, supplemental tools, and General Assembly's tailored training programs to bring their in-house capabilities up to speed.

FILLING THE GAPS: WHY HIRING & DEVELOPING SOFTWARE ENGINEERING TALENT IS SO HARD — AND WHAT FINANCIAL INSTITUTIONS CAN LEARN

Sourcing software engineering talent becomes more difficult with every passing year. Financial firms aren't only competing with other organizations within the industry, but with virtually every industry — and not just here in the U.S., but the world over.

Although financial institutions are prepared to meet the high compensation standards set by Big Tech, they face challenging competition with "cool companies." Work-life balance concessions, unique perks, big bonuses, and splashy marketing may be needed to attract talent to an industry that the Millennial and Gen Z workforce may perceive as somewhat "dry."

Most organizations already have modernization efforts in flight, with a particular use case in mind and an awareness of the specific skills they need to fill — or project goals they need to achieve.

Retaining existing employees and upskilling them is a strategic and sustainable approach. But how do financial institutions do that?

An easy first step might be to source asynchronous pull model content — where employers pay for access to online educational content aimed at bolstering particular areas of expertise, whether it be artificial intelligence, data engineering with AWS, or C++. However, while these courses offer a flexible and convenient way to build fundamentals, engagement issues often arise. Some employees won't ever take advantage of these programs in the first place, let alone complete the curriculum on their own time.

Software engineering fluency training is another common starting point — the idea being that corporate leaders will then be able to add a high level of vernacular to their existing knowledge base and learn how to work better with technical or cross-functional teams.

But while helpful at boosting top-down understanding of the tech landscape, this modest measure isn't enough to cover the breadth and depth of software engineering needs at the application level.

For a more hands-on training method, financial companies can partner with General Assembly for instructor-led, targeted training tailored to specific business needs. Employers may want to migrate a certain percentage of their operations to the cloud over the next 12 months and need the software engineering team that can do it, or they may need a new set of software engineering skills that can make best practice customer experiences more repeatable. Some companies need their new talent off to a strong start, while others may seek diversification of their workforce to meet DEI initiatives or offshore candidates that cost less to employ. These objectives can all be met through General Assembly's software engineering training programs.

To remain modern and competitive, financial institutions need to know how to reskill, upskill, and meet talent requirements quickly and efficiently — in a way that's also scalable, sustainable, and in other words, future-proofed. Looking ahead, General Assembly helps financial organizations tackle long-term tech-related challenges proactively — answering questions like, "How can we keep pace with business as usual, balancing the need for enhanced speed, capabilities, and quality assurances, all the while mitigating risks?" and "How can we resolve customer issues, while abiding by ever-changing privacy and security regulations?" And, most importantly, "How can we find updated skills training modules and net-new talent pipelines to fill future gaps?"

GA meets the needs of modernizing financial institutions with a three-prong approach: Upskilling, Reskilling, and Hire-Train-Deploy.

3 WAYS GA CAN HELP FINANCIAL SERVICES GET THE TECH & SOFTWARE ENGINEERING TALENT THEY NEED TO THRIVE

How Leading Financial Institutions Modernize Their Fleet of Software Engineers

General Assembly delivers innovative solutions for financial institutions ready to invest in employee skill development in order to drive productivity, efficiency, and profitability.

Here's how:

1. We Upskill Your Current Engineering Workforce

General Assembly's live, instructor-led Modern Engineer course brings legacy mid-career software engineers up to speed in approximately 35 to 45 hours of study, with foundational topics like:

- Cloud infrastructure
- Containerization
- Microservices
- Continuous integrations
- Test-driven development

We help financial institutions build increased software engineering capacity and solve current challenges by introducing next-gen tools and concepts required to build and deploy modern applications.

Whether you choose live in-office instruction, live online courses, asynchronous self-paced assessments, or any hybrid combination, you can count on an engaging program that's built by internal experts and informed by industry best practices — with 1:1 support for every learner.

OUR IMPACT: LEADING GLOBAL BANK

A leading global bank partnered with General Assembly to train 225 employees on next-generation tools and technologies, enabling teams to build and deploy modern applications.

As a result of the training, 10% of employees in the program moved into more technical and specialized roles. By investing in their talent, the bank also experienced reduced attrition rates.

2. We Reskill Your Most Promising Employees Into Engineering Roles

In 2024, versatility is the wildcard up a finance CIO's sleeve. The best employees are loyal, hard workers who show up with a growth mindset, prepared for continuous learning — and sometimes — these employees are not software engineers. They may be business analysts, project managers, operations specialists, or legacy IT personnel with promise.

GA's **Software Engineering Immersive for Financial Services** delivers the framework for transitioning from an unrelated discipline into tech. Our modular, on-shelf software engineering content builds out your program. We can add deep-dive immersives, accelerators, and a final layer of customization to ensure your team is trained in a way that's interactive, relevant, and provable.

For many employers, reskilling is a path to preserving valuable internal knowledge — and preserving loyal employees whose roles have become redundant due to technological advances. In fact, the 2022 Annual Career Optimism Index found 40% of employees surveyed fear their job skills will become outdated due to technology, and 52% feel "easily replaceable" — yet 65% of workers say they'll stay throughout their career if their employer made an effort to reskill them.

OUR IMPACT: GLOBAL FORTUNE 100 INSURANCE COMPANY

In the age of automation and tightened operational budgets, a global insurance leader came to GA for a developer reskilling program to help retain talent in at-risk, tech-adjacent roles.

Rather than losing good, loyal employees, 200 professionals with basic tech and IT competencies were placed on differentiated journeys that focused on coding, APIs, infrastructure, and cloud-native development. These journeys ranged from two to five weeks, depending on the individual's starting knowledge.

The insurer is now positioned to continue leading the industry with:

- High staff retention rates that preserve knowledge of customers, processes, and tools.
- Increased staff proficiency in evolving tech areas that make the company competitive.
- Expedited speed of talent deployment into high-demand, hard-to-fill developer roles.
- Meaningful career pathways for employees who want to advance their tech skills, evolving tech areas that make the company competitive.

GA makes it easy to select promising candidates for career investment and set them in motion. Our fast-track program effectively inspires confidence and produces reskilled employees ready to make a difference in their new software engineer roles on day one.

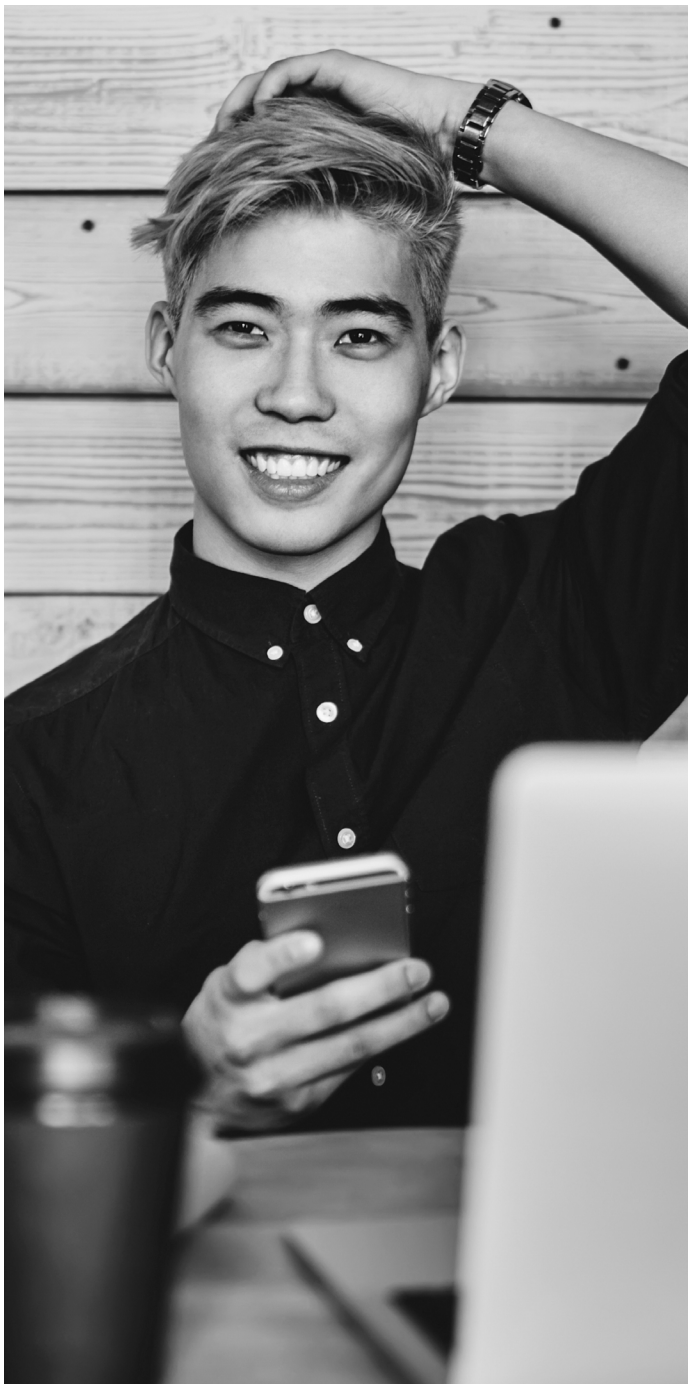
OUR IMPACT: BIG 4 UK BANK

A Big 4 U.K. bank asked us to create a new aspiring software developer career track program to provide the opportunity for non-technical graduates to reskill through multi-week, immersive training in software engineering and Java development.

Graduates gave the program exceptionally high marks out of 5.0:

- 3.3 – Pacing (3 being "just right")
- 4.6 – Content Relevancy
- 4.9 – Overall Value for Time Spent
- 90% – Net Promoter Score (likelihood to recommend the course to a colleague)

One participant said, "I've thoroughly enjoyed every minute of this course — even the most challenging bits — and I really feel like I've grown as a person."



3. We Recruit GA-Educated Software Engineers Ready To Jump Into Finance Jobs

We can also onboard new software engineering talent — equipping them with a conceptual understanding of modern technologies, processes, and workflows while emphasizing practical skills application within enterprise contexts.

GA's Hire-Train-Deploy and external talent pipeline programs build permanent recruitment solutions. In periods of buoyancy, financial institutions can recruit and hire in great numbers by tapping into GA's pipeline of career-ready program graduates with targeted train-to-spec programs.

OUR IMPACT: FORTUNE 100 US BANK

A Fortune 100 U.S. bank sought an alternative approach to hiring and onboarding tech talent. Through a partnership with GA, the bank *built a five-month developer academy* that first vetted promising candidates, then delivered best-in-class software engineering curriculum and contextualized onboarding.

This immersive program retrained 90 liberal arts graduates — all of whom settled into software engineer and web developer roles with our U.S. bank partner.

At the six-month mark, bank managers rated the performance of the program grads as "equal to or higher than computer science graduates in comparable roles."

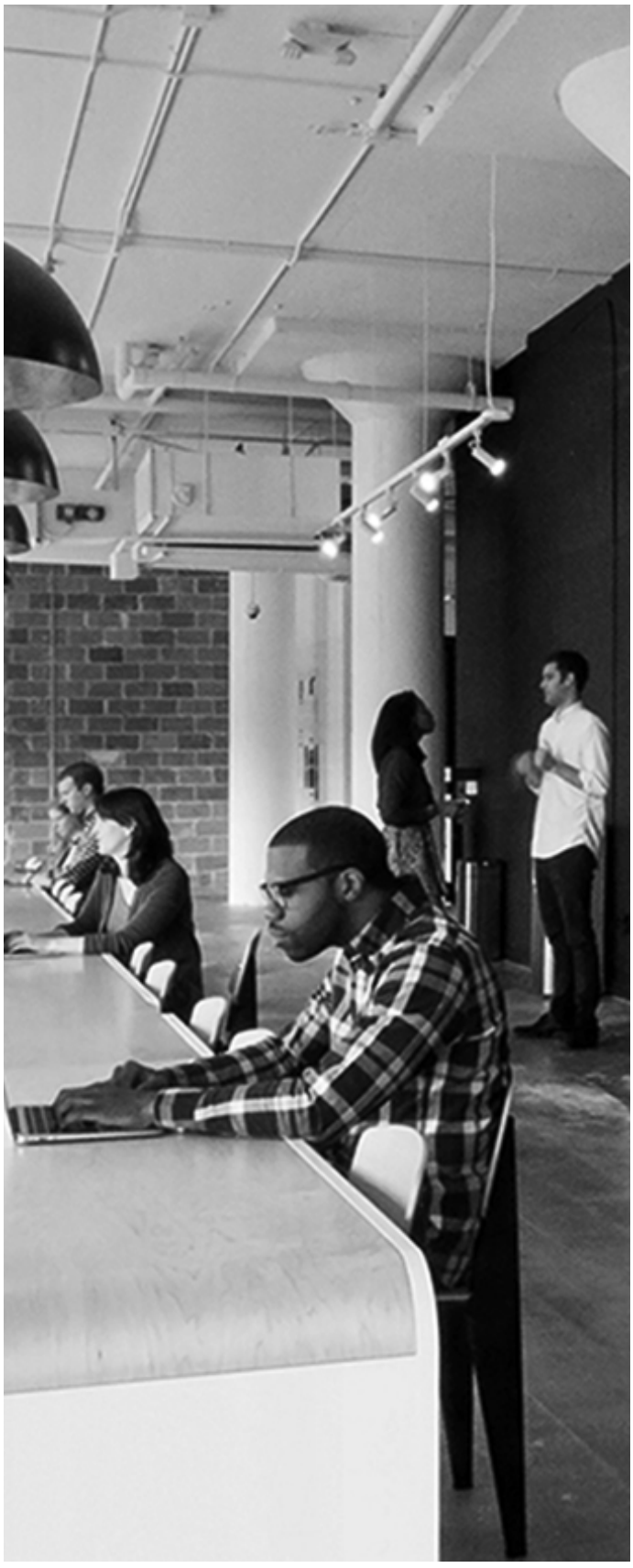
Whether a financial institution needs specialized skills sourced locally or diversity-enhancing offshore talent, GA's long-term solutions balance the need for quality, speed, scale, and cost-effectiveness.

OUR IMPACT: BIG 4 UK BANK

In a separate engagement for the same U.K.-based global bank, GA helped create a diverse talent pool of software engineers and scaled existing software engineering teams in order to significantly increase their internal technology capabilities.

As a result of the highly-effective onboarding program, more than 400 graduates filled the bank ranks and leveled up their skills as net-new tech analysts and junior software engineers.

One JavaScript grad said the modern engineering program provided "lots of opportunities to practice and to clear our doubts as well" — and added, "The instructors make the classroom environment very engaging and interesting!"



THE FUTURE OF FINANCE STARTS HERE

The role of software engineers in the financial and banking sectors will only continue to grow and evolve, driven by the imperative to bring products to market faster and keep up with customer demand. From leveraging data for personalized customer engagement to adopting cutting-edge technology stacks and agile operating models, financial institutions face a pressing need to fill the software engineering skills gap and become future-ready.

General Assembly offers a multifaceted approach to address these challenges. Through upskilling existing talent, reskilling promising employees, and hiring educated software engineers, we have a proven track record of significant impact in the financial services industry.

To thrive in the tech-driven future that's already here today, financial institutions must prioritize continuous learning, diversify their talent pool, and adopt innovative strategies for workforce development. General Assembly stands ready to be your strategic partner in navigating these changes and building a resilient, future-ready software engineering team.

Let's get started.