

# IT CAREER PATHS:

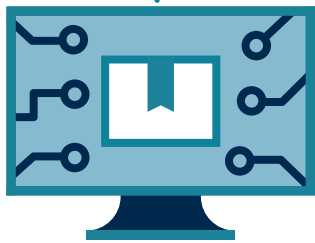
How To Elevate  
Your IT Career

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# Introduction

The [International Data Corporation \(IDC\)](#) predicts that by 2024, 55% of all information and communication technology investments “will be linked to digital transformation.” With this upward movement within the IT industry, the landscape is ripe for motivated IT professionals to enter the field. But as with many professions, IT requires training and guidance to move beyond entry-level positions and genuinely excel.



The Bureau of Labor Statistics projects that employment in computer and information technology occupations will grow 13% by 2030.

Deloitte’s “[2022 Technology Industry Outlook](#)” suggests the proliferation of hybrid and multi-cloud systems will push businesses to ramp up their efforts to manage associated complexities. The report also predicts that companies in a post-pandemic era will look to build more resilient systems to guard against future uncertainties and will advance collaboration and experimentation within a thriving hybrid workforce.

As the industry grows and changes, so do IT career paths. [The Bureau of Labor Statistics](#) projects that employment in computer and information technology occupations will grow 13% by 2030, adding 667,600 new jobs. Leading-edge technology sectors like cloud computing, big data, and cybersecurity are driving that growth.

With the right education and experience, IT professionals can break into the industry and advance their careers in a variety of directions, like management or specializations.

Here is some industry information to help get you on your path to a successful IT career.

# Understanding the IT Industry

If you already work  
in the industry, you  
know that getting a  
job in IT isn't difficult.



IT is changing quickly. [Spiceworks](#) predicted that businesses would triple their adoption of artificial intelligence technologies and double their edge computing capacities by next year. A survey in the same report found that these trends will inspire 53% of businesses to increase their tech budgets, while 35% plan to maintain their current tech spending. Spiceworks found IT automation to be the most widely adopted technology by IT buyers across multiple industries, and the most impactful business tech trend. [Brookings Institution](#) also suggested that automation may complement and create more job demand than it replaces.

If you work in the industry, you may know that getting an entry-level job in IT isn't difficult — companies are always looking for help desk agents and technical support. But you'll need experience and training to advance your career. As technology evolves and pervades every industry, the need for skilled IT professionals grows. A [Korn Ferry report](#) predicted that more than 80 million tech jobs worldwide could sit empty by 2030 — which could rob businesses of roughly \$8.5 trillion in annual revenue.

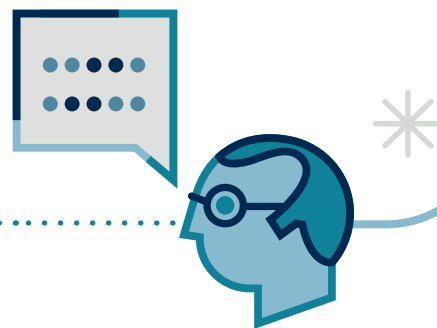
So how can you land a better-paying, more fulfilling tech job?

# Advancing to the Next Level

If you're already in an entry-level position,  
you've got a head start ...

"I would say working in the help desk is the best place to start because you get exposure to all areas of IT," said Ryan Whisler, program chair for the Bachelor's program in Information Technology and Master's program in Information Technology Management at Western Governors University. "While addressing issues as part of the help desk team, think about what you find most interesting and would be most interested in doing. If, for example, you're intrigued by why some software seems to generate a lot of calls to the help desk and other software generates few support tickets, this might draw you toward a programming path."

Whisler suggested that people who like tinkering with operating systems and interconnecting computing devices might be drawn to network and server support. Others might examine their hobbies — building computers, creating apps, or building websites — to see what sort of IT niche appeals to them.



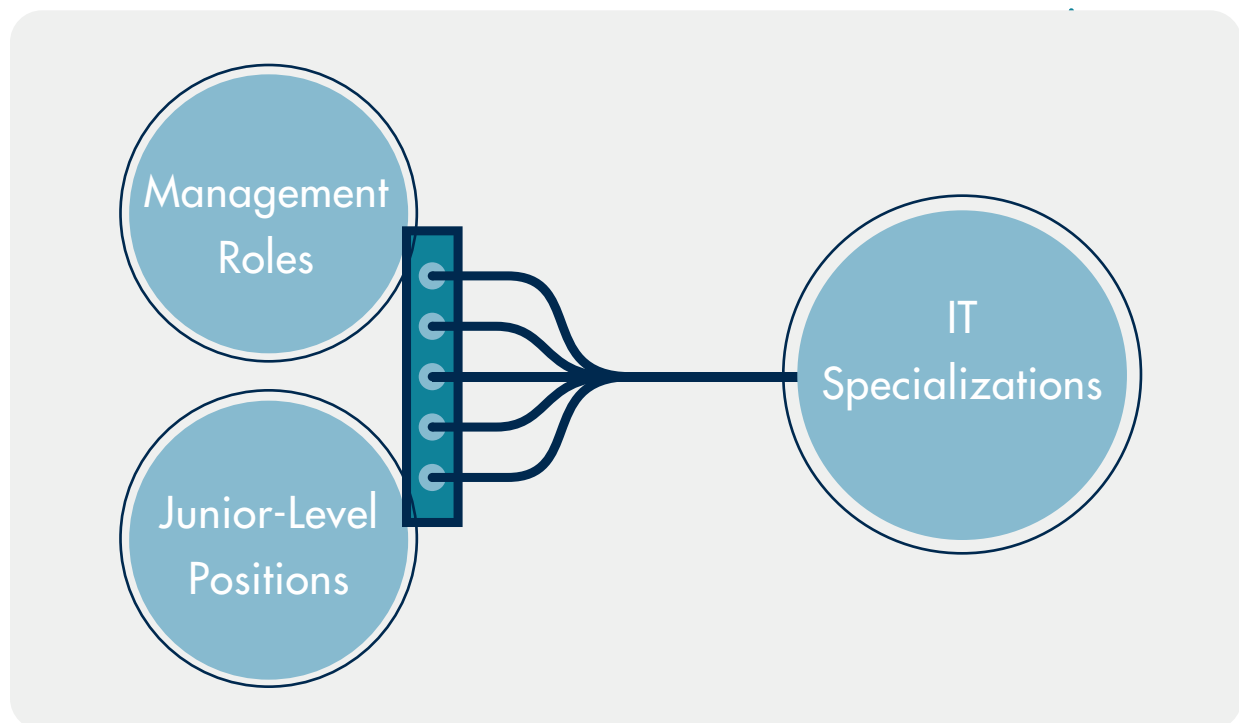
Once you've identified your path, the next step in elevating your career is to seek advice from mentors.

"This may be the most important part," Whisler said. "They should share with their managers and peers what their interests are and solicit advice about the opportunities that exist and how to prepare for them. Often the path you take is influenced by the doors that open, mixed with your passions."

Armed with direction and good information, you can start pursuing the degrees and certifications that can help you build the career you want.

# The Traditional IT Hierarchy

Some IT roles are extremely common and can be found at almost every company. They're the people who keep the computers running, install new software, and patch existing software. Nontechnical professionals might call them the "IT Team." But, like most corporate structures, IT has a traditional hierarchy. Knowing how to navigate IT's typical terrain is the key to advancement.



# IT Professionals



## Web and Software Developers

“Developer” is a term that covers a lot of ground. Depending on the context, it could involve software development or database development — or both.



### WHAT DO THEY DO?

Developers generally use their technical skills and creativity to design, build, and maintain applications and programs. Some develop for the web, some develop mobile apps, and others work on more complex or specialized applications.



### HOW MUCH DO THEY MAKE?

Because developers often work as a collaborative group, they should be team players with good communication skills. They should also be proficient in coding languages such as HTML, C++, Python, and JavaScript. Because they need a unique set of technical and nontechnical skills, developers earn a solid paycheck: According to [PayScale](#), software developers make around \$73,691 a year, on average.

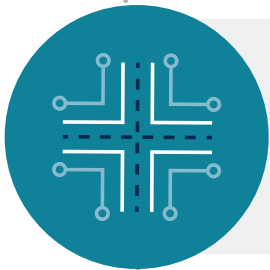


### HOW DO YOU BECOME ONE?

Generally, you’ll need a four-year degree in computer science or IT to land a job as a developer, but some companies are more interested in a developer’s experience. Developers are creatives who often build projects of their own, so with enough experience and a solid portfolio, a new developer might be able to land a high-paying job without an advanced degree. But that is not always the case.

After working in development for a while, programmers might move to project management, become software engineers, or pursue a specialized field. Many of the areas driving the growth of the IT sector, such as artificial intelligence and cloud computing, need professionals who understand programming languages.

# Junior-Level Positions



## Systems Administrator

Systems administrators — also called sysadmins — manage a company's IT infrastructure.



### WHAT DO THEY DO?

Systems administrators install, configure, and maintain any hardware (e.g., servers or network equipment) and software (e.g., email programs) used by an organization's IT systems and networks. They control access to those systems and networks, and make sure they're running smoothly. Systems administrators also add users to networks, assign permissions, patch servers, run updates, and upgrade tools.



### HOW MUCH DO THEY MAKE?

Systems administrators need strong hardware and software technical skills, and they must be able to communicate with their nontechnical peers. In addition, Whisler said, sysadmins need soft skills that allow them to learn and troubleshoot new network issues. They should also be able to coordinate workflows and multitask because they will likely be overseeing more than one system or network.

The average systems administrator makes \$63,899 a year, according to [PayScale](#). That varies, however, based on experience and location.



# Junior-Level Positions



## HOW DO YOU BECOME ONE?

"Generally, someone works their way up to a systems admin role because their time working in other roles helps them build a skill set and knowledge base that they will need to take on responsibility to maintain a system," Whisler said.

The most important knowledge a sysadmin can have is knowledge of the platform they are managing.

"If you are managing a Microsoft Exchange email server, then you must possess a deep knowledge of that system," Whisler said.

Systems administrators will likely need a bachelor's degree in a related field, but that often depends on the company. Most organizations, however, require relevant experience along with certifications — for example, they'd want someone who works with Microsoft systems to hold a Microsoft Certified Solutions Expert Cloud Platform and Infrastructure certification or someone who works with Linux to have an LPI Linux Essentials certification.

So where do systems administrators go from here? They usually become senior systems administrators, and sometimes move into network administration.



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# Management Roles



## IT Manager

The IT manager is typically the first step on an administrative track in IT.



### WHAT DO THEY DO?

IT managers supervise their organization's computer infrastructure, oversee the company's IT personnel, often procure software and contact vendors, and assist with the department's budget. IT managers typically monitor company data use and design some of the related policies and procedures. For example, they might decide which devices are granted access to the company network. The IT manager will often step in if an employee misuses data or devices.

Whisler said the skills an IT manager needs will depend a lot on who they're leading.

"One common thread for all IT managers would be project management skills," he said. "It's important that all IT managers be able to balance responsibilities related to completing projects as well as addressing frequent emergencies, outages, and system performance issues."



### HOW MUCH DO THEY MAKE?

Leading a team of IT professionals requires managers to have strong managerial and leadership skills, understanding of project management, and of course strong technical skills. IT managers usually earn close to \$89,118 a year, according to [PayScale](#).

# Management Roles



## HOW DO YOU BECOME ONE?

Because IT managers are responsible for a wide range of systems and technologies, companies often look for a candidate with a broad IT background and experience managing people, in such positions as project managers or team leads. Some job postings call for a minimum of 10 years' experience in IT.

This position also requires more education than subordinate roles. IT managers should have at least a bachelor's degree in information technology, computer science, or a similar field. They might also be required to hold specific certifications. For instance, if a manager leads a team of programmers, getting an Agile development and DevOps certification is a way to improve career standing. Help desk managers might be benefited by IT Support ITIL certification, which provides education for infrastructure library framework fundamentals.



## Project Manager

Just like the name implies, a project manager manages IT projects, including software development projects and network maintenance initiatives.



## WHAT DO THEY DO?

Project managers organize projects and oversee plan executions for their teams. They also coordinate with different departments to implement production schedules. Ultimately, it's a project manager's responsibility to complete projects on time and under budget.

Project managers spend most of their time directly managing the work of a project, which differs from other IT management roles. IT managers, for example, might get distracted by day-to-day operational issues, IT outages, or other service issues.

# Management Roles

"It's difficult as an IT manager to go about your day without being involved in discussing a project," Whisler said. "That said, you may or may not be the one directly managing and tracking the budget and timelines. This is where the project manager shines, as they are very focused on managing the project and ideally not distracted by the non-project surprises that are handled by the IT manager."



## HOW MUCH DO THEY MAKE?

Because they're overseeing a team, project managers need excellent people skills and should also have some familiarity with the software lifecycle. They'll likely need to be acquainted with methodologies such as Agile and DevOps, and because they're responsible for budgets, they should have some experience with finance.

Project managers typically make just over \$88,899 a year, [PayScale](#) notes, although experienced project managers can make six-figure salaries.



## HOW DO YOU BECOME ONE?

While some project managers land the job right away — often by being close to a project that falls into their lap — others might work for a few years as a developer and pursue certification before taking a project manager position.

To stay competitive, however, even accidental project managers need a bachelor's degree — potentially even a master's degree — in a computer science field. It's likely they'll also need certifications like the [Certified Associate in Project Management](#) (CAPM) certification and the [Project Management Professional](#) (PMP) certification from the [Project Management Institute](#). The CAPM requires a little less than a year of job experience, and the PMP requires between two and four years on the job.



## WHERE MIGHT YOU GO FROM HERE?

While some project managers become senior project managers, others go on to become leaders or directors of their departments.

# Top of the Ladder



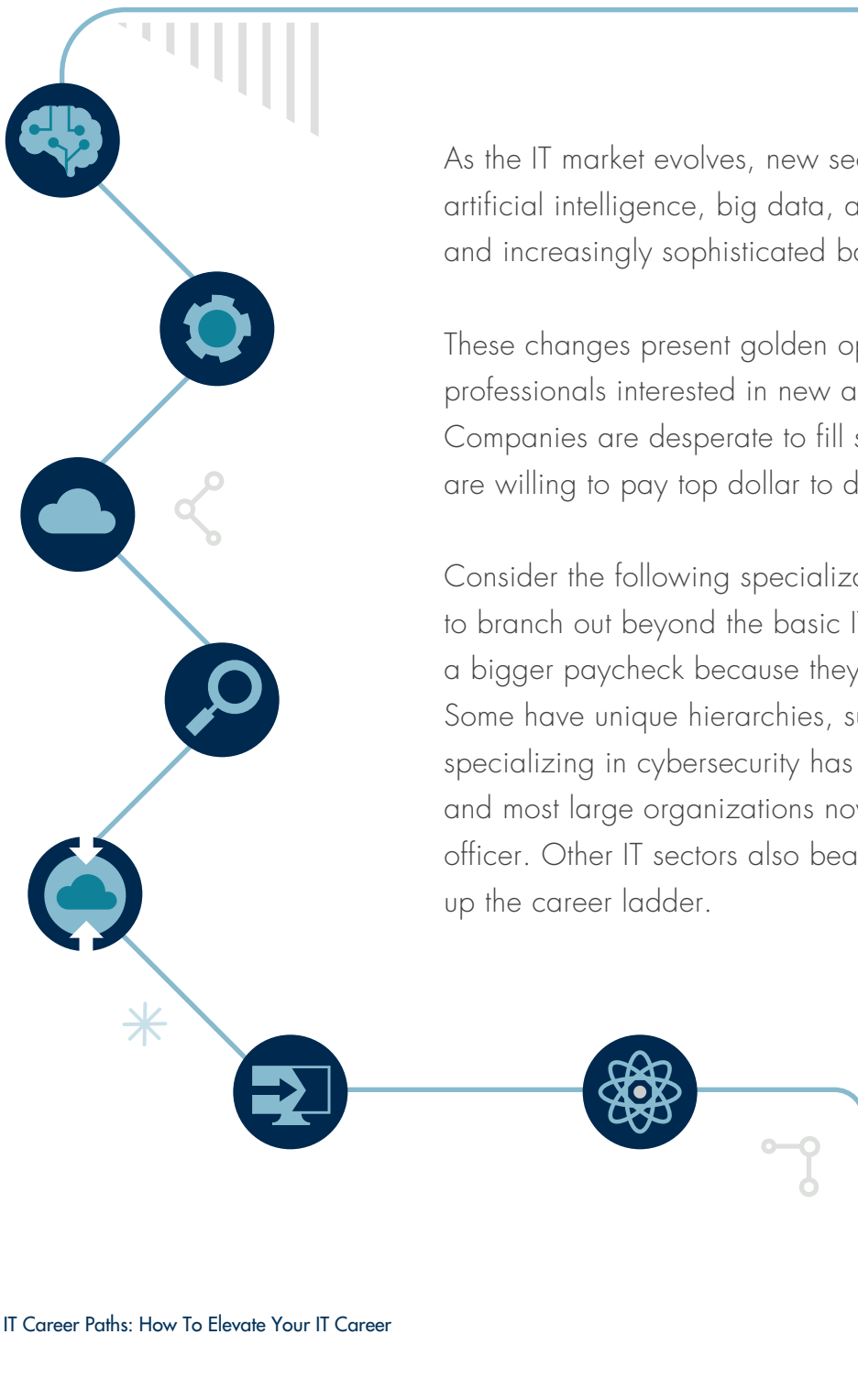
Senior IT staffers usually command salaries north of \$169,145 a year.

Director of IT, vice president of technology, chief information officer, and chief technology officer are four executive senior roles that control a company's IT organization. They're at the pinnacle in traditional IT hierarchy. And while these jobs involve managing people, their greater duties involve devising and directing an organization's IT strategies and working with other executives to drive productivity. Senior IT staffers usually command salaries north of \$169,145 a year, according to [PayScale](#).

If you have your sights set on a corner office, you'll certainly need a bachelor's degree in computer science or a related field. You'll also likely need a master's degree or some other advanced degree, which will help you develop the technical and leadership skills needed to guide an organization's enterprise technology goals. [Chron](#) notes that though a master's degree isn't usually required for an executive-level job, having one can give you a leg up, as many employers look for higher education when reviewing resumes.



# IT Specializations



As the IT market evolves, new sectors drive change in artificial intelligence, big data, and cloud computing, and increasingly sophisticated bad actors threaten security.

These changes present golden opportunities for IT professionals interested in new and expanding areas. Companies are desperate to fill specialized roles and are willing to pay top dollar to do it.

Consider the following specializations if you're hoping to branch out beyond the basic IT roles. Many of them offer a bigger paycheck because they're in greater demand. Some have unique hierarchies, such as cybersecurity — specializing in cybersecurity has its own path to the c-suite, and most large organizations now have a chief security officer. Other IT sectors also bear their own distinctive steps up the career ladder.

# IT Specializations

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## Specialized Software Developer

To keep up with the rapidly shifting IT landscape, companies continually look for IT professionals who can help them build products for emerging fields.

Developers are in an excellent position to specialize because they understand programming languages and the development process. In many cases, all a developer has to do to work in a specialized area is learn a specific programming language and be curious about new technology.

The following specialized development roles are in demand right now. Here are a few tips on getting into each one.



### **ARTIFICIAL INTELLIGENCE**

Because organizations are working hard to harness the capabilities of artificial intelligence, Whisler thinks that AI puts you on the leading edge of creating innovative products and elevating how companies interact with and create value for their customers. "I feel like it has the most long-term potential and opportunity," he said. "AI would provide you with a more differentiated skillset."

Developers interested in working with AI can pull down about \$98,937, on average, according to [Salary.com](https://www.salary.com), but they'll need to know several programming languages, such as Python, Java, C++, and C#. They'll probably need a master's in computer science too.

# IT Specializations



## EDGE COMPUTING

Edge computing is changing the way that cloud computing works by bringing processing power and storage closer to the end user rather than in a central location. Because it's a new discipline, edge computing needs developers. The specialization is still so new that average salary information is tricky to track down, but various edge computing-related positions on [LinkedIn](#) scale upwards of \$125,000.

For an edge computing career, you'll typically need a bachelor's degree in IT or computer science and knowledge of open-source technologies, such as Docker, Linux, and Horizon, to become an edge computing specialist.



## CLOUD COMPUTING SPECIALIST

Because organizations are moving their operations to the cloud, IT professionals who can create cloud-based software are in high demand. Moving to cloud computing means a bigger payday: Cloud developers usually make about \$113,998, according to [Glassdoor](#), and cloud engineers make upwards of \$99,007, [PayScale](#) reported.

To move into cloud computing, developers should bone up on programming languages — such as Java, AngularJS, C++, Scala, and Python — and be familiar with Amazon Web Services, SQL, Kubernetes, Spark, Apache Hadoop, Apache Kafka, Red Sift, DevOps, Docker, and Linux. A bachelor's degree in cloud and systems administration can teach you the ins and outs of cloud architecture and development.

Specialists in cloud computing aren't strictly focused on programming — far from it. Cloud engineers and architects are involved in high- and low-level implementations of cloud infrastructure and environments, from high-performance cloud computing systems to high-availability data storage clusters and physical network deployments.



# IT Specializations



## Data Specialist

Thanks to big data, data analysts, data scientists, and other data workers are in high demand. LinkedIn reports a shortage of more than 150,000 data workers across all industries, and listed data scientist among the [11 most in-demand tech jobs for 2022](#).

Though data science is extremely marketable and in high demand, getting into the field demands more education than many IT roles. Most jobs require at least a [bachelor's degree in a data-related discipline](#); some require a master's degree. Data workers — even those who come from a technical background and have excellent skills in databases and SQL — will need a degree in data science. Common data jobs include:



### DATA ANALYST

Data analysts make sense of big data. They use it to answer queries and manage databases and other database tools. They should know how to use tools, platforms, and languages such as SQL, SharePoint, Tableau, and Microsoft Excel. Excel might seem like a basic program next to SQL, but analysts must have a deep understanding of more advanced functionality to perform their jobs effectively. The average data analyst makes about \$62,970 a year, according to [PayScale](#).



### DATA SCIENTIST

Data scientists analyze data, too, but they also design the algorithms and the data modeling processes that generate data. According to [PayScale](#), the average data scientist's salary is around \$97,358.

# IT Specializations



## Cybersecurity Specialist

Because of rising cyberattacks, hacks, and data breaches, cybersecurity professionals are in record demand. According to a report from IBM and the Ponemon Institute, the average cost of a data breach is \$3.92 million, so companies are desperate to ensure that their data is safe.

Despite these risks, there's a cybersecurity talent gap: The Bureau of Labor Statistics projects that information security analyst jobs will grow by 33% by 2028, but CyberSeek reports a critically low supply of qualified cybersecurity workers to take those jobs.

Security is everyone's responsibility, so if you already work in IT, you probably have some of the skills you need to get you started on the path to a security role — for example, basic protection knowledge. In fact, Whisler indicated that software developers are required to balance product speed and functionality with security. Thus, they can leverage their understanding of how to write secure code as a jumping-off point to move into a security-focused career path. When it comes to software, "it doesn't matter how well it works if it has vulnerabilities."

To specialize in cybersecurity, take stock of your existing skills. Do you know how to test and encrypt software, and perform a risk assessment? If so, you're well-positioned to jump from a traditional IT job into security. If not, look into a degree program in cybersecurity to boost your skills. Growing cybersecurity roles include:

# IT Specializations



## **CYBERSECURITY ANALYST**

Cybersecurity analysts scan IT networks for vulnerabilities and defend against attacks — and offer fixes after one occurs.



## **CYBERSECURITY ENGINEER**

Cybersecurity engineers design and implement solutions to defend a network against attacks. They evaluate current security measures and develop processes and tools to protect data and resources.



## **PENETRATION TESTER**

Penetration testers assess a company's systems and networks to make sure that they're secure — sometimes by running tests and sometimes by attempting a hack themselves.



Jumping to cybersecurity can increase your earning power: The average cybersecurity analyst makes \$77,754, according to [PayScale](#), but specialized cybersecurity roles tend to be higher up the pay scale.

# Elevating Your IT Career

The IT industry stands as a trove of new opportunities for ambitious IT professionals who want to learn new skills and elevate their careers. But career advancement in most IT sectors requires more than just job experience, particularly for those who want to move into specialized areas or up the corporate ladder. For instance, IT management positions typically require an individual have at least a bachelor's degree in information technology; a project manager would often be expected to hold certifications such as the Certified Associate in Project Management or a Project Management Professional.

With vital skills earned through an accredited degree, IT professionals have the potential to secure exciting roles and excel in their field of choice.

**Check them out and see  
what a degree can do for  
your IT career**