Cyber security

Data and digital technology are no longer self-contained industries, but vital parts of almost every industry there is. And as businesses go digital, so too do our intellectual property and personal information. Properly protecting this data is essential. Cyber security encompasses everything that relates to the protection of data and networks, and expertise in the field so in demand that qualified candidates are practically guaranteed work.

Cyber security employment can be found in a wide range of industries and focuses on a number of specialties. Information security analysts plan and carry out security measures; forensic roles deal with the aftermath of data breaches; penetration testers identify vulnerabilities to help prevent breaches; security architects establish and maintain network security; and the CIO sits at the top tier of the industry, overseeing all of this.[1]

For each career pathway there's a lot of technical knowledge and many certifications to acquire to demonstrate mastery, so it's best for aspiring cyber crime fighters to research each specialty early and get on track for the role that best fits their skill set and goals.

Specialties[1, 2, 3]
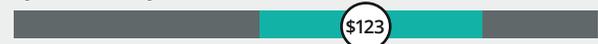
Information security analyst ($51–$108K)

$80

Forensic computer analyst ($49K–$118K)

$84

Penetration & vulnerability tester ($58K–$136K)

$97

Cyber security architect ($86K–$160K)

$123

Chief information security officer ($106–$200K+)

$123

$0 $25K $50K $75K $100K $125K $150K $175K $200K

Skills of the field

Technical skills

- Information technology
- Operating system architecture, administration, & management
- Programming
- Risk analysis & mitigation
- Security tools

Soft skills[1]

- Communication
- Teamwork
- Judgement and decision-making
- Complex problem-solving
- Inductive reasoning

Job growth

Projected growth for cyber security jobs vs general computer occupations and overall national job growth, United States 2018–2028.[4]

Information security specialists

+32%

Computer occupations

+12%

All occupations

+5%

● 2018   ● Additional jobs by 2028*

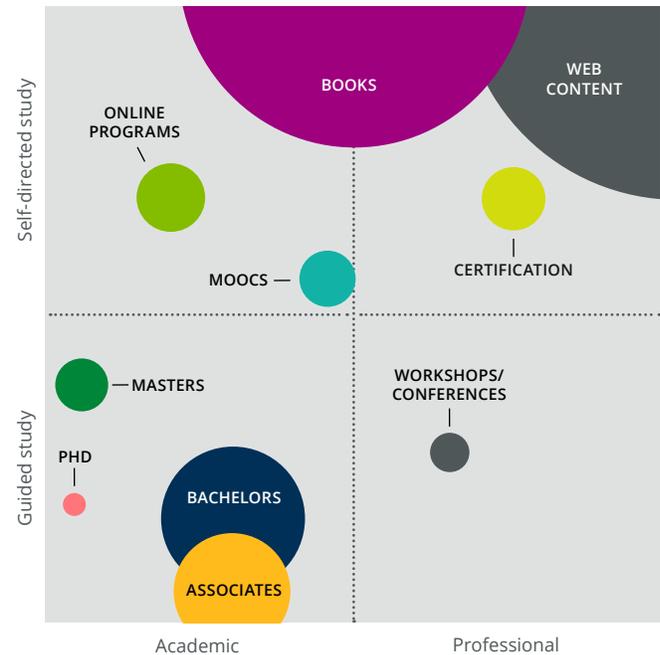*projected*
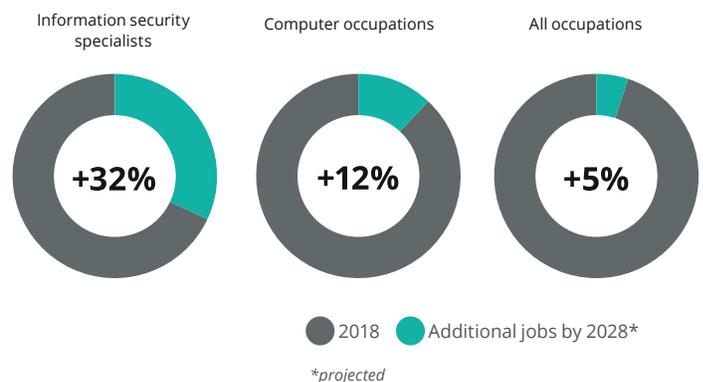
Study options available

Most entry-level cyber security positions require only an undergraduate degree (which degree may not matter if you have the right skills and certifications), but a graduate degree will open the door to more senior positions and quicker advancement. Increasingly, schools are offering degree programs specific to cyber security (represented in the chart above) that students can pursue rather than the more broad "computer science".

No matter what degree a candidate boasts, their prospects may be further improved by adding professional certifications to their résumé. In fact, many job postings will require that prospects come to the table with at least a foundational certification, or will ask employees to acquire further credentials for career development.[5]

Explore additional fast-growing professions that offer new opportunities for rewarding careers—with the right education and skills.

See the careers >

Cyber security education options

Self-directed study

Guided study

ONLINE PROGRAMS

BOOKS

WEB CONTENT

MOOCS —

CERTIFICATION

—MASTERS

WORKSHOPS/ CONFERENCES

PHD

BACHELORS

ASSOCIATES

Academic

Professional

Insider advice

"Anyone interested in cybersecurity needs to get a degree, as going to college helps you to learn how to learn. No one in IT or security has all the answers, but what defines us as IT and security folks is how we figure out problems. You learn how to become a lifelong learner in college and develop new skills on the job as you fine tune your natural gifts."[6]

– Charles Poff, CISO, Salespoint

Sources

[1] "Cyber security degrees & careers: How to work in cyber security", learnhowtobecome.com

[2] Payscale.com

[3] "Cybersecurity career pathway", cyberseek.org

[4] "Occupational Outlook Handbook: Information Security Analysts", Bureau of Labor Statistics, U.S. Department of Labor

[5] "Best cyber security certification path for a great career", Mark Hillyard

[6] "Tips for those of all ages interested in pursuing a career in cybersecurity", Charles Poff

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