

JOB PROFILE:

CRYPTOGRAPHER/ CRYPTANALYST AKA ENCRYPTION EXPERT



DEGREE REQUIRED?

Yes

Master's Degree

Focusing on Mathematics or
Computer Science is Encouraged

MEDIAN SALARY

+\$100,000

JOB GROWTH

21%

SOFT SKILLS

Intelligent, Analytical & Creative

Capable of Tackling
Complex Mathematical Problems

Trustworthiness

COMMON JOB DUTIES

- ▶ Protect important information from interception, copying, modification and/or deletion
- ▶ Evaluate, analyze and target weaknesses in cryptographic security systems and algorithms
- ▶ Design robust security systems to prevent vulnerabilities
- ▶ Develop statistical and mathematical models to analyze data and solve security problems
- ▶ Test computational models for reliability and accuracy
- ▶ Investigate, research and test new cryptology theories and applications
- ▶ Probe for weaknesses in communication lines (e.g. wireless network, secure telephone, cellphones, email, etc.)
- ▶ Ensure message transmission data (e.g. wireless network, secure telephone, cellphones, email, etc.) are not illegally accessed or altered in transit
- ▶ Decode cryptic messages and coding systems for military, political and/or law enforcement agencies





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CYBER DEFENSE INCIDENT RESPONDER



DEGREE REQUIRED?

No

Bachelor's Degree in
Cybersecurity or Computer
Science is a plus though

MEDIAN SALARY

+\$80,000

JOB GROWTH

+20%

SOFT SKILLS

Capable of Handling Stress
Flexible
Problem-Solving
Analytical
Good Communication

COMMON JOB DUTIES

- ▶ Actively monitor systems and networks for intrusions
- ▶ Identify security flaws and vulnerabilities
- ▶ Perform security audits, risk analysis, network forensics and penetration testing
- ▶ Perform malware analysis and reverse engineering
- ▶ Develop a procedural set of responses to security problems
- ▶ Establish protocols for communication within an organization and dealings with law enforcement during security incidents
- ▶ Create a program development plan that includes security gap assessments, policies, procedures, playbooks, training and tabletop testing
- ▶ Produce detailed incident reports and technical briefs for management, admins and end-users
- ▶ Liaison with other cyber threat analysis entities





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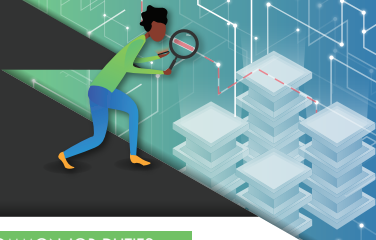
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CYBER FORENSICS EXPERT



DEGREE REQUIRED?

Yes

Bachelor's Degree
in Cybersecurity or
Computer Science

[Master's Degree in Computer Forensics helps]

MEDIAN SALARY

+\$70,000

JOB GROWTH

+28%

SOFT SKILLS

Curiosity & Insight

Strong Communication

Ability to Write Reports &
Explain Evidence, Potentially
in Front of Lawyers & Judges

COMMON JOB DUTIES

- ▶ Conduct data breach and security incident investigations
- ▶ Recover and examine data from computers and electronic storage devices
- ▶ Dismantle and rebuild damaged systems to retrieve lost data
- ▶ Identify additional systems/networks compromised by cyber attacks
- ▶ Compile evidence for legal cases
- ▶ Draft technical reports, write declarations and prepare evidence for trial
- ▶ Give expert counsel to attorneys about electronic evidence in a case
- ▶ Advise law enforcement on the credibility of acquired data
- ▶ Train law enforcement officers on computer evidence procedures
- ▶ Keep abreast of emerging technologies, software and methodologies





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CYBER LEGAL ADVISOR



DEGREE REQUIRED?

Yes

Juris Doctorate Degree
is required

MEDIAN SALARY

\$92,000

JOB GROWTH

28%

SOFT SKILLS

Good communicator
Good listener
Approachable
Interpersonal skills

COMMON JOB DUTIES

- ▶ Advocate for an organization in legal and legislative proceedings
- ▶ Evaluate contracts
- ▶ Evaluate regulations, policies and procedures
- ▶ Interpret and apply laws
- ▶ Resolve conflicts in policies and procedures
- ▶ Maintain a working knowledge of relevant constitutional issues
- ▶ Evaluate the impact of changes to laws and regulations
- ▶ Help implement changes to laws
- ▶ Provide legal guidance to management, personnel, or clients





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CYBER SECURITY ENGINEER



DEGREE REQUIRED?

Yes

Bachelor's Degree
in Cybersecurity or
Computer Science

MEDIAN SALARY

+\$90,000

JOB GROWTH

+20%

SOFT SKILLS

Complex Problem Solving
Creativity
Strong Communication
Ability to Work in a Team
Capable of Handling Stress

COMMON JOB DUTIES

- ▶ Create new ways to solve existing production security issues
- ▶ Configure and install firewalls and intrusion detection systems
- ▶ Perform vulnerability testing, risk analyses and security assessments
- ▶ Develop automation scripts to handle and track incidents
- ▶ Investigate intrusion incidents, conduct forensic investigations and mount incident responses
- ▶ Collaborate with colleagues on authentication, authorization and encryption solutions
- ▶ Evaluate new technologies and processes that enhance security capabilities
- ▶ Test security solutions using industry standard analysis criteria
- ▶ Respond to information security issues during each stage of a project's lifecycle
- ▶ Define, implement and maintain corporate security policies





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JOB PROFILE:

INFORMATION SYSTEMS SECURITY MANAGER



DEGREE REQUIRED?

Yes

Bachelor's Degree
in Cybersecurity or
Computer Science

MEDIAN SALARY

\$110,000

JOB GROWTH

+20%

SOFT SKILLS

Strong Leadership
Good Communication
Efficient Multitasker
Creative Problem Solver
Comfortable Delegating

COMMON JOB DUTIES

- ▶ Manage organizational resources (time, money, personnel, etc.) to support security goals and policies
- ▶ Create and execute strategies to improve the reliability and security of IT projects
- ▶ Define, implement and maintain corporate security policies and procedures
- ▶ Spearhead vulnerability audits, forensic investigations and mitigation procedures
- ▶ Respond immediately to security-related incidents and provide a thorough post-event analysis
- ▶ Manage a diverse team of security administrators, analysts and IT professionals
- ▶ Advise leadership on organization's cybersecurity status
- ▶ Institute organization-wide training in security awareness, protocols and procedures
- ▶ Assess, test and select new security products and technologies





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JOB PROFILE:

MULTI-DISCIPLINED LANGUAGE ANALYST



DEGREE REQUIRED?

Yes

Bachelor's Degree

in target language is encouraged
if applicant is not a native speaker

MEDIAN SALARY

\$55,000

JOB GROWTH

42%

SOFT SKILLS

Good Communicator

Detail-oriented

Analytical

Identify contexts & subtleties
in written & verbal communications

COMMON JOB DUTIES

- ▶ Analyze and process information using language and cultural expertise
- ▶ Compile and interpret data for intelligence
- ▶ Assess a target's motivation and frame of reference for intelligence context
- ▶ Analyze metadata to look for patterns, anomalies, or events
- ▶ Identify cyber threat tactics
- ▶ Identify foreign languages and dialects in initial source data
- ▶ Help optimize the development of language processing tools
- ▶ Analyze social network activities
- ▶ Translate voice and graphic data
- ▶ Identify cyber or technology-related terminology used in target languages





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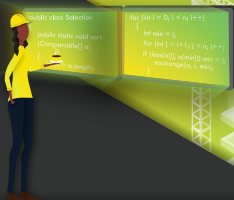
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SOFTWARE DEVELOPER



DEGREE REQUIRED?

Yes

Associate's Degree

A Bachelor's or Master's in
Computer Science is Encouraged

MEDIAN SALARY

\$70,000

JOB GROWTH

24%

SOFT SKILLS

Good Communicator

Able to Work on a Team

Analytical

Meet Deadlines

COMMON JOB DUTIES

- ▶ Develops, creates, maintains, and writes/codes computer applications, software, or utility programs
- ▶ Design, implement, and test software
- ▶ Assist in the development of a company-wide software security strategy
- ▶ Facilitate meetings and workshops to define client processes and needs
- ▶ Create new software systems or forensic tools
- ▶ Participate in the lifecycle development of software systems using different methodologies
- ▶ Design and build proof-of-concept prototype solutions
- ▶ Institute programming techniques that are free from logical design and technical implementation flaws
- ▶ Gain a thorough knowledge of attack vectors that may be used to exploit software
- ▶ Support software deployments to customers





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JOB PROFILE:

VULNERABILITY ASSESSMENT ANALYST

AKA
VULNERABILITY ASSESSOR



DEGREE REQUIRED?

No

Real-world experience is much more valued than a degree, though a degree won't hurt

MEDIAN SALARY

\$75,000

JOB GROWTH

+20%

SOFT SKILLS

Alternative Problem Solving
Curious & Creative
Attention to Detail
Strong Communication
Interest in Hacking

COMMON JOB DUTIES

- ▶ Identify critical flaws in applications and systems that cyber attackers could exploit
- ▶ Conduct vulnerability assessments for networks, applications and operating systems
- ▶ Conduct network security audits and scanning on a predetermined basis
- ▶ Use automated tools (e.g. Nessus) to pinpoint vulnerabilities and reduce time-consuming tasks
- ▶ Use manual testing techniques and methods to gain a better understanding of the environment and reduce false negatives
- ▶ Develop, test and modify custom scripts and applications for vulnerability testing
- ▶ Compile and track vulnerabilities over time for metrics purposes
- ▶ Write and present a comprehensive Vulnerability Assessment and maintain a database
- ▶ Supply hands-on training for network and systems administrators





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