Cyber Security as a Career

Prospects & Opportunities

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Information Security Leader

EliteCISOs
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Business Information Security Officer – Global IBXs
Nissan Digital | Nissan Motor Corporation

19 years experience across

Career Journey

IT | ITES | ISP | BFSI | Media & Entertainment | Healthcare R&D | Automotive

UNITED ONLINE | G4S | ACS A xerox Company | ENVESTNET YODLEE | technicolor | SOCIETE GENERALE | ISGN | PHILIPS | NISSAN MOTOR COMPANY (NISSAN / INFINITI / DATSUN)

Education

- MBA (HR), Edith Cowan University, Australia
- MCA, Madurai Kamaraj University

Certifications & Trainings

- EU GDPR, PMP, CISM, CRISC, CDPSE, CIPR, CEH
  - ISO 27001 LA, BCCE, CPISI, CNSS, CCNA

Core Competencies

- Information Security / Business Continuity GRC program for ISO 27001 ISMS, GDPR PCI DSS, SOX, GLBA HIPAA
- Enterprise Risk Management – Assessment, Mitigation
- IAM, DLP, VAPT
- Security Awareness, Messaging, Branding & Promotion
- Incident Management – Response, Handling & Reporting
- Security Metrics – KPIs, KRIs, Dashboards
- Data Privacy – Program Mgmt - Assessment and Advisory
- Business Continuity Management – Planning, Awareness, Testing, Monitoring, Crisis Management & Communications

Honors & Awards

- Recognized as Top 50 Global Cyber Security | Risk | Privacy | Culture Thought Leader - 2020 by Thinkers360
- CISO Platform Top 100 Influencers Award – 2020, 2019 2018
- CISO of the Year 2019 | Next100 CIO Award 2018 | Big 50 CISO Award 2018 | Indywood IT Excellence Award
- Multiple Corporate Internal Awards

Industry Outreach

- Occasional Guest Speaker at Security Conferences, Training Programs & in-house Corporate Talks

Security Philosophy

Security is always too much… until it's not enough!

Published Author

- *Cyber Crimes – A Primer on Internet Threat & Email Abuses*, Viva Books, New Delhi

Agenda

- Understanding Cyber Security

- At-Risk Emerging Technologies

- Why Cyber Security Career?

- Cyber Security Domains

- Career Paths

- Security Certifications

- CISO Mindmap

- Skills Shortage

- Some Career Advice

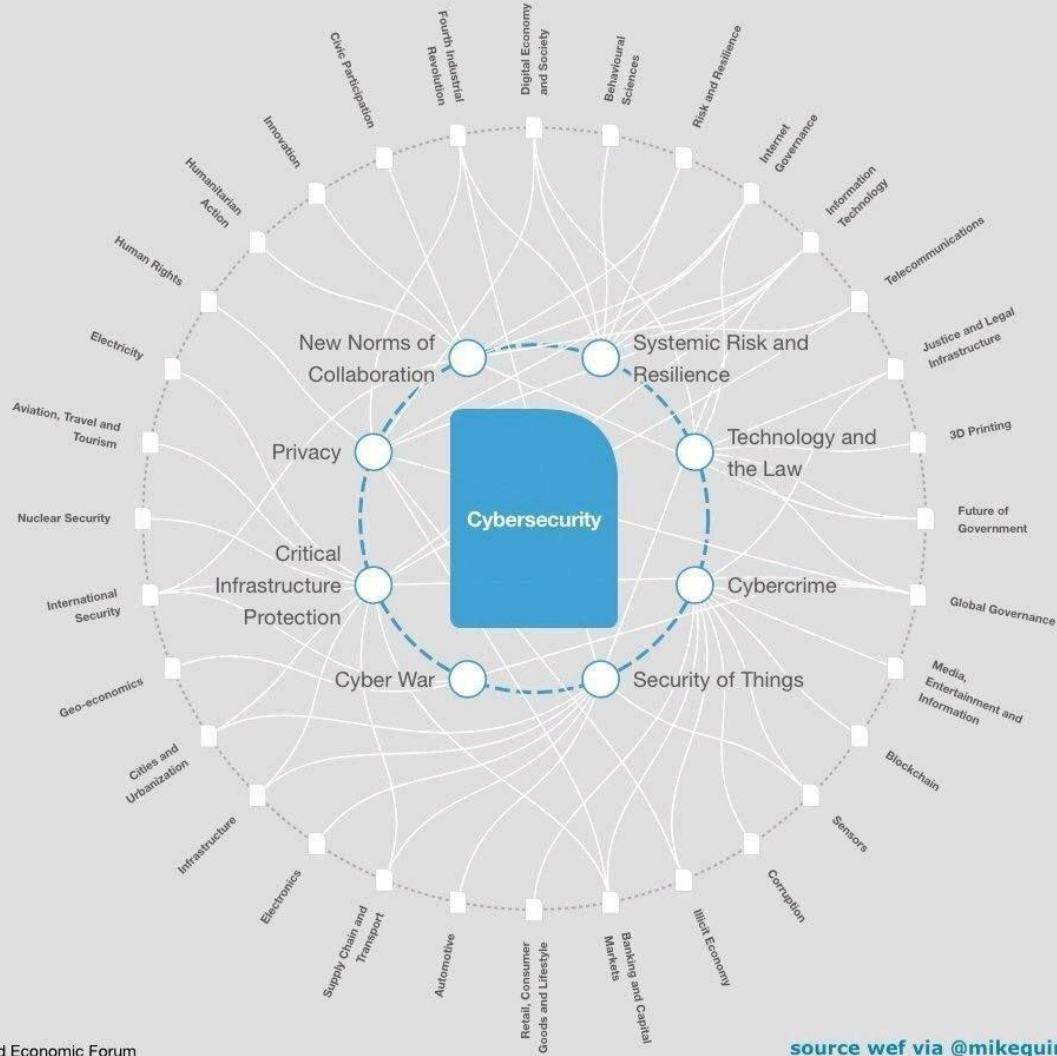**Disclaimer**: The views expressed herein are personal and not that of my employer.
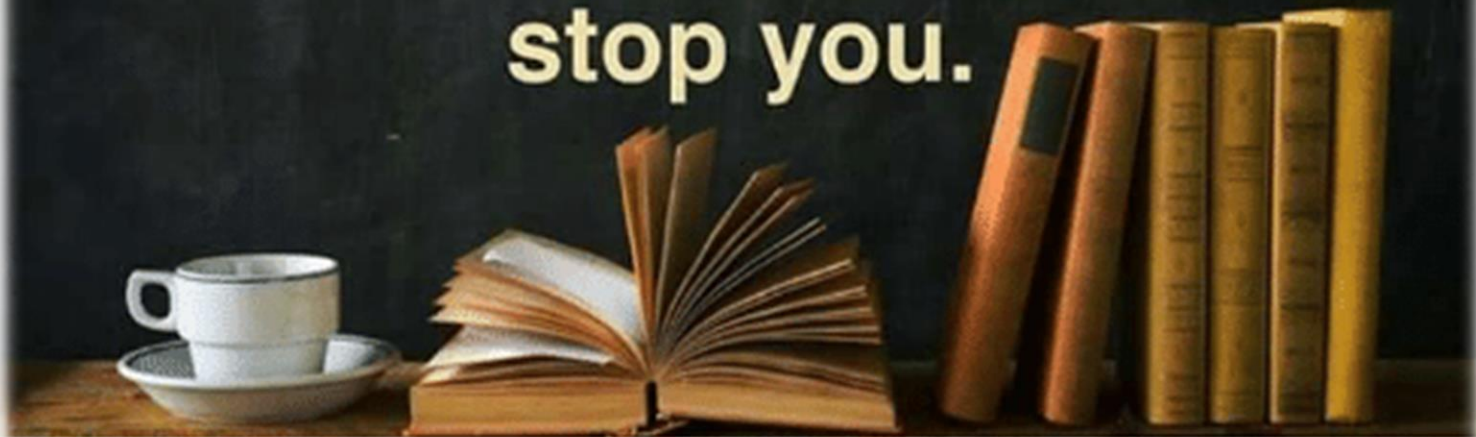
2009

2019

In just 10 years camera man & pilot both lost their jobs. UPGRADE YOURSELF
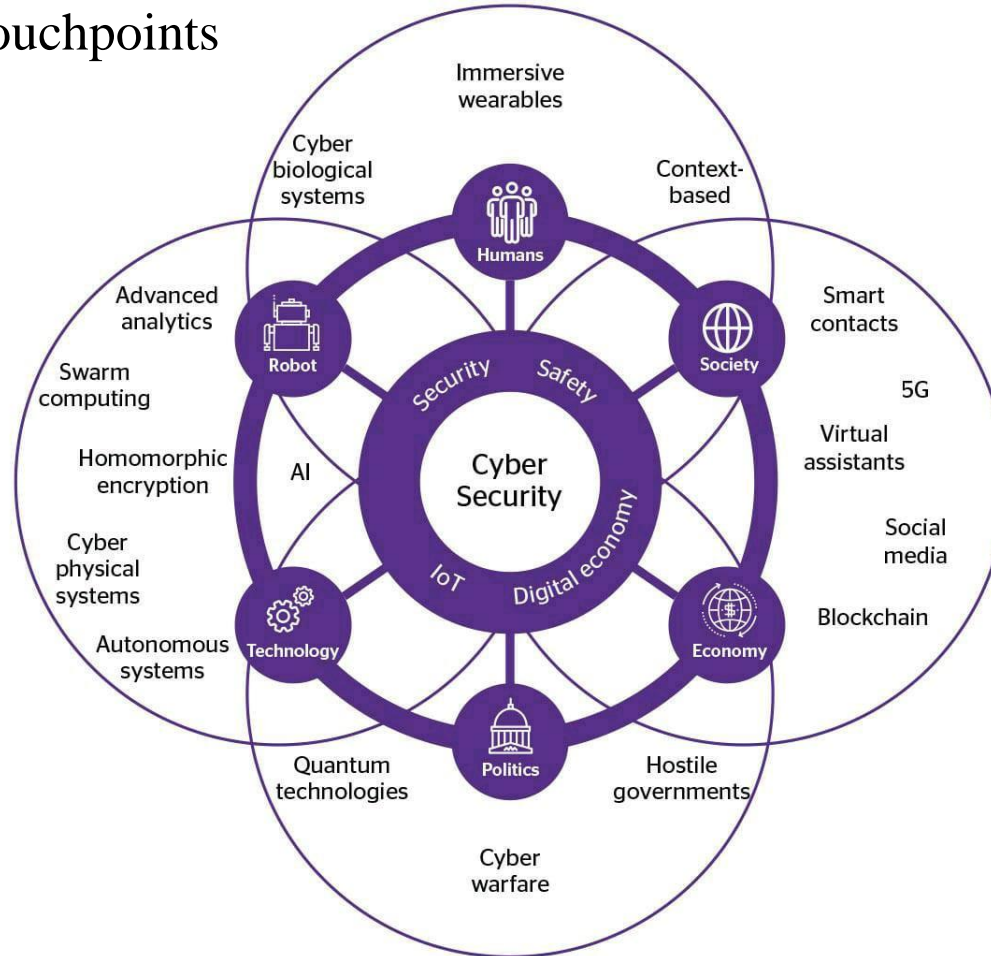
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The **best investment** you can make, is an **investment in yourself...** The more you **learn**, the more you'll **earn**.

– Warren Buffett

AZ QUOTES

New Norms of Collaboration

Systemic Risk and Resilience

Privacy

Technology and the Law

Cybersecurity

Critical Infrastructure Protection

Cybercrime

Cyber War

Security of Things

Civic Participation · Fourth Industrial Revolution · Digital Economy and Society · Behavioural Sciences · Risk and Resilience · Innovation · Internet Governance · Humanitarian Action · Information Technology · Human Rights · Telecommunications · Electricity · Justice and Legal Infrastructure · Aviation, Travel and Tourism · 3D Printing · Nuclear Security · Future of Government · International Security · Global Governance · Geo-economics · Media, Entertainment and Information · Cities and Urbanization · Blockchain · Infrastructure · Sensors · Electronics · Corruption · Supply Chain and Transport · Illicit Economy · Automotive · Banking and Capital Markets · Retail, Consumer Goods and Lifestyle

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source wef via @mikequindazzi

Cyber Security Touchpoints

At-Risk Emerging Technologies
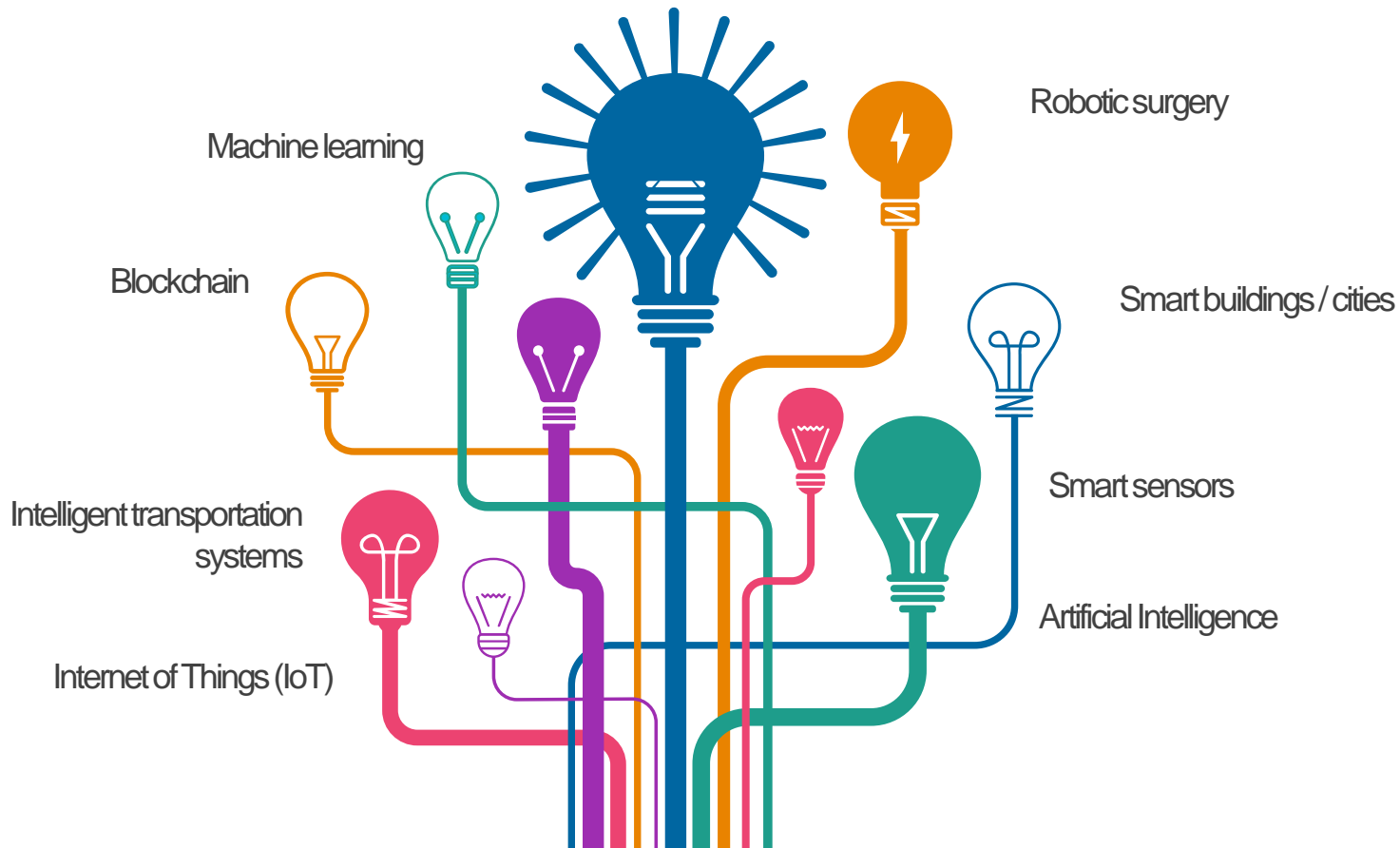
Hot Technologies in 2020 and Beyond

I — Internet of Things
B — Blockchain Technology
A — Artificial Intelligence
C — Cybersecurity

Ahmed Banafa ©
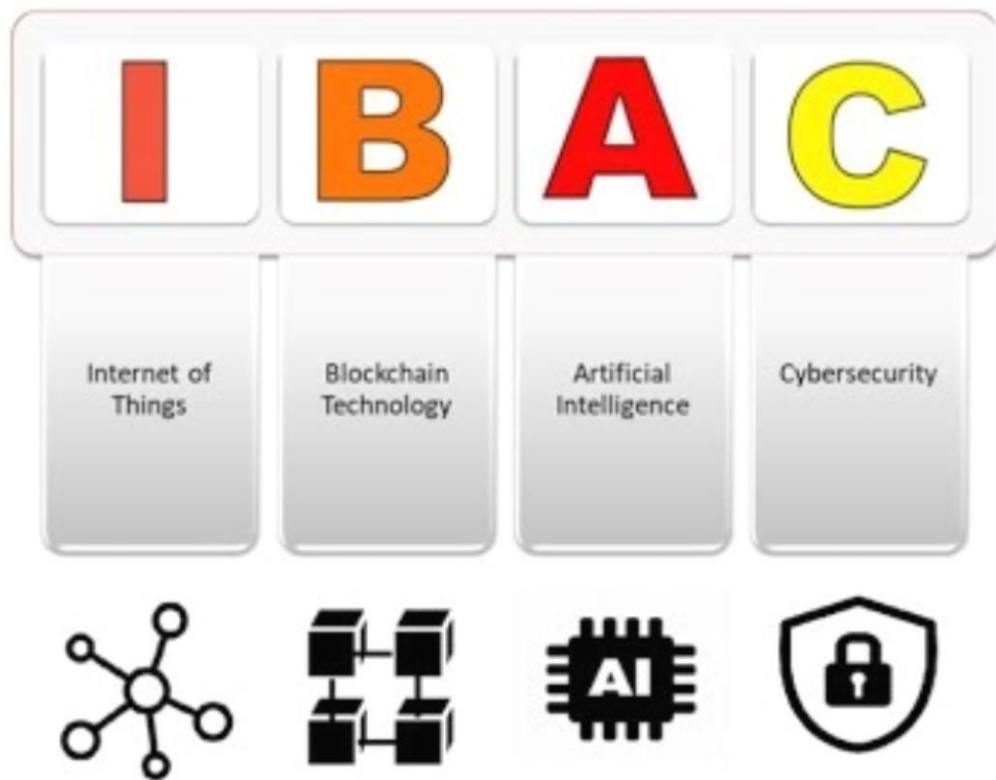
How IoT, Blockchain, AI, and Cybersecurity (IBAC) will revolutionize business

IoT feels

Blockchain remembers

AI thinks

Cybersecurity protects

http://www.oracle.com
Design : Ahmed Banafa

Changing Attacker Profiles

State Sponsored

Organized Crime

Hacktivist

Criminal

Recreational

- Fame and notoriety
- Limited technical resources
- Known exploits

- Vandalism
- Limited technical capabilities

- Statement
- Relentless, emotionally committed
- Vast networks
- Targeted attacks

- Economic gain
- Significant technical resources and capabilities
- Established syndicates
- Adware, crimeware, IP theft

- Cyberwar, state secrets, industrial espionage
- Highly sophisticated
- Nearly unlimited resources
- Advanced persistent threats

INCREASING RESOURCES AND SOPHISTICATION

The expansion of attacker types, their resources, and their sophistication.

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Why Cyber Security as a career?

CYBERSECURITY JOBS

ARCADIA
Cyber Defense

Job postings in the cybersecurity field have gone up over

74%

the past 5 years

JOBS

A career in information security analysis is **fifth** on a list of best technology jobs

Average salaries nationally are $88,890, and higher in cities such as San Francisco and New York

There are currently **1 MILLION** unfilled cybersecurity jobs worldwide

Part of the problem is that cybersecurity has not been a career field for as long as other tech areas

Source: techrepublic.com

10 Reasons why you should consider Cyber Security as a career

1. The future is digital - every aspect of tech has a security side to it

2. Intellectually challenging & exciting field - vibrant & dynamic domain

3. More Job Opportunities – world-wide demand

4. Hackers don't take a break – Attacks & Breaches are inevitable and the cost of data breach is going up

5. Data Privacy & compliance regulations getting tighter across the world – Need more security pros

10 Reasons why you should consider Cyber Security as a career

6. High paying jobs & rewarding career – Premium $$$

7. Practically unlimited growth – faster career growth

8. Variety of domains to specialize in – domain is vast and evolving

9. Real job – implement/assess/deliver/advise/oversee security projects

10. The job has real impact – protects infra/data/privacy/money even lives

RECESSION-PROOF INDUSTRIES AND JOBS, BY MEDIAN PAY

RECESSION-PROOF INDUSTRY Job Title	OVERALL MEDIAN PAY
CLOUD COMPUTING Information Technology (IT) Architect	$126K
ARTIFICIAL INTELLIGENCE (AI) Software Developer	$83.7K
BIG DATA ANALYTICS Data Scientist	$99.1K
CYBER SECURITY Cyber Security Analyst	$76K
DIGITAL MARKETING Marketing Manager	$66.2K

SOURCE: PAYSCALE

YAHOO! FINANCE

Fundamental shifts happening in job market

1. Qualifications to Skills

2. Job Searching to Networking

3. Profile building to Brand building

4. Job applications to Job Search Strategy

5. Job changes to Career Planning

If you are a fresher/college student looking for a break in cyber security….

Be curious, start actively learning about the domain, specialize in one or two areas

1. Put Learning over Earning: The more you learn and apply those learnings you'll earn more later.

2. Take risks: Trying new things, is also a learning experience.

3. Proactively learn the domain - enroll for courses/training, do self-study.

4. Be part of professional associations like ISACA or ISC2 and you get access to their knowledge base.

5. Network with cyber security professionals, identify someone senior and accomplished and request them to be your mentor

6. Attend conferences or webinars on cyber security and related domains

7. Forever Upskill: Develop an active learning mindset. Pursue both formal & informal learning through certifications, trainings, education programs.
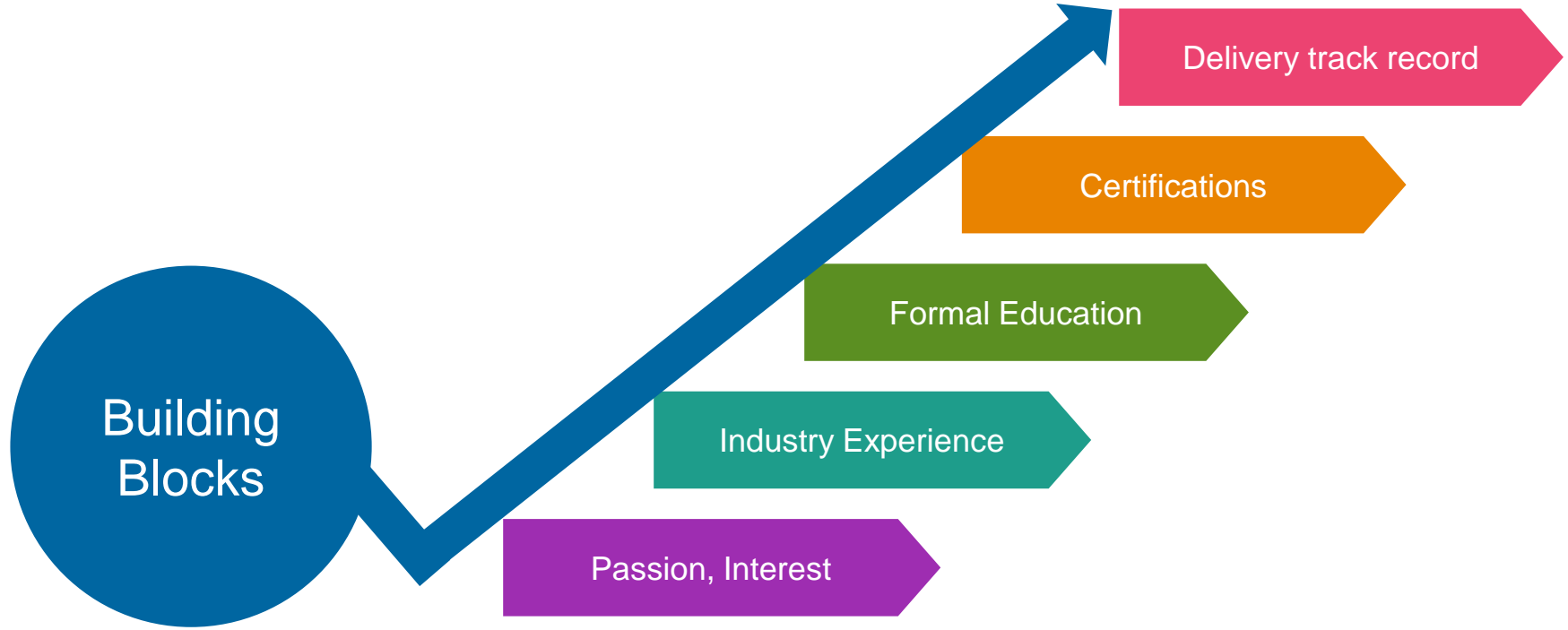
If you are mid-career professional looking for a break in cyber security….

- There's no fixed standard career path

- If you are in system/network side, you can scale up easily to infrastructure security operations. Try learning about Security Operations Center technologies like SIEM, SOAR, EDR and related technologies.

- Or get into Cloud Security and specialize in any of the top cloud service providers technology.

- You can get into vulnerability scanning/penetration testing. Gain mastery into the different tools available and you can become an ethical hacker.

- Other security technologies like - DLP/IAM also offer opportunities.

- If you are into coding, its relatively easy to move into application security & testing. This domain is called Application Security. Try learning about secure coding, OWASP Top 10 vulnerabilities, secure code testing. There are lot of tools available in the market for secure code scanning.

- If you are in auditing, you can look at system auditing which is part of security risk management.
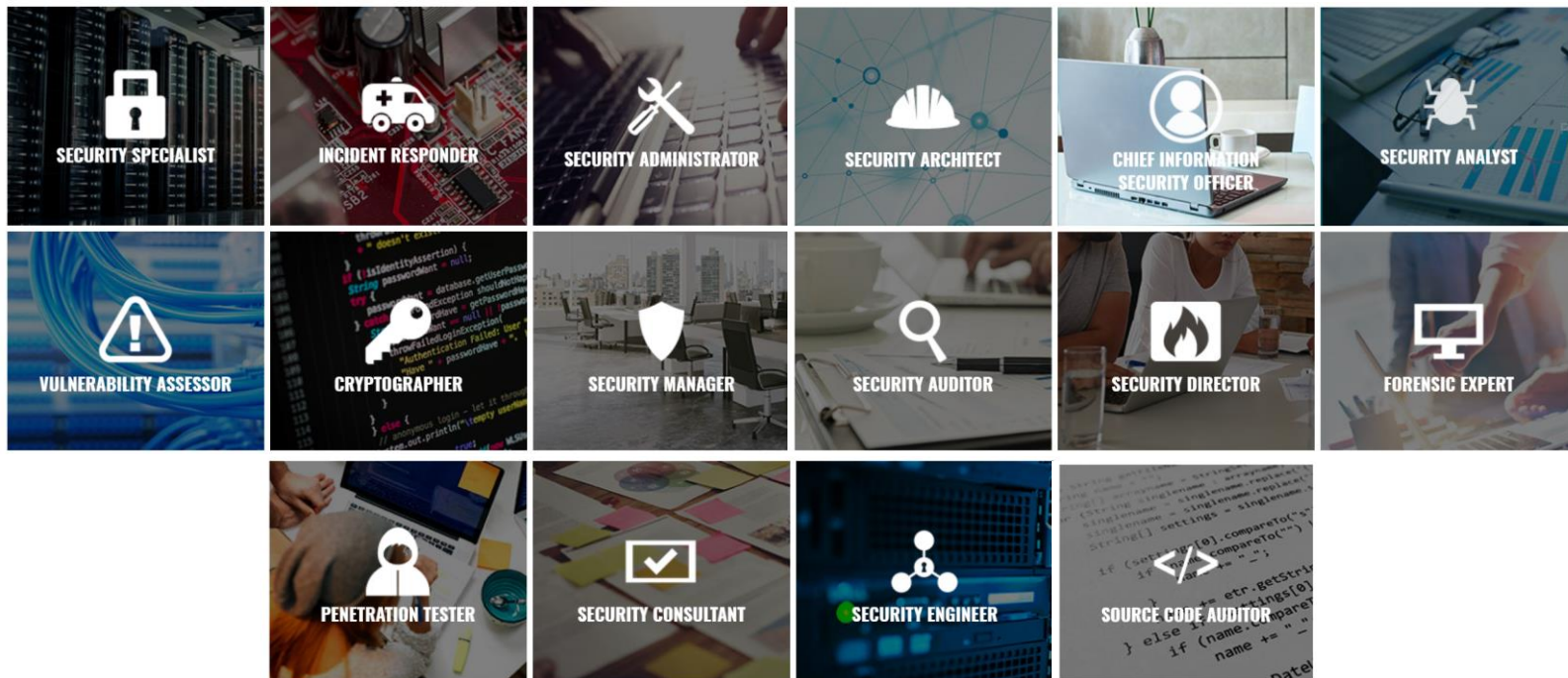
If you are mid-career professional looking for a break in cyber security….

- Each of these are distinct domain itself and takes considerable time, effort & resources to gain expertise.

- Proactively learn the domain - enroll for courses/training, do self-study, be part of professional groups, network with cyber security professionals, join professional groups & bodies, attend conferences or webinars.

- Identify someone senior and accomplished in cyber security and request them to be your mentor

- When you equip yourself with the right skills, knowledge & credentials you will be more confident and employers will have the comfort level to hire you.

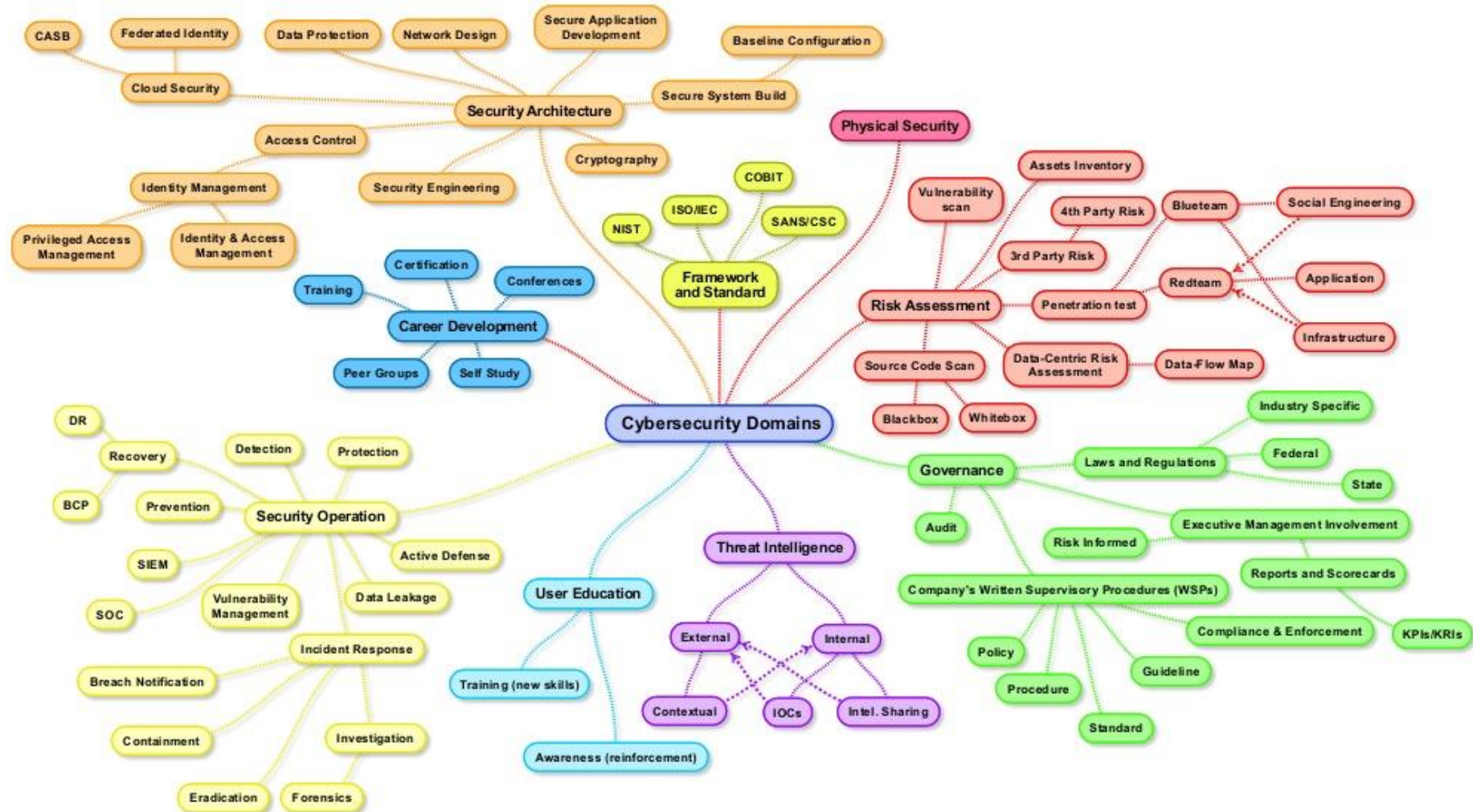- And look for lateral opportunities first before looking out.

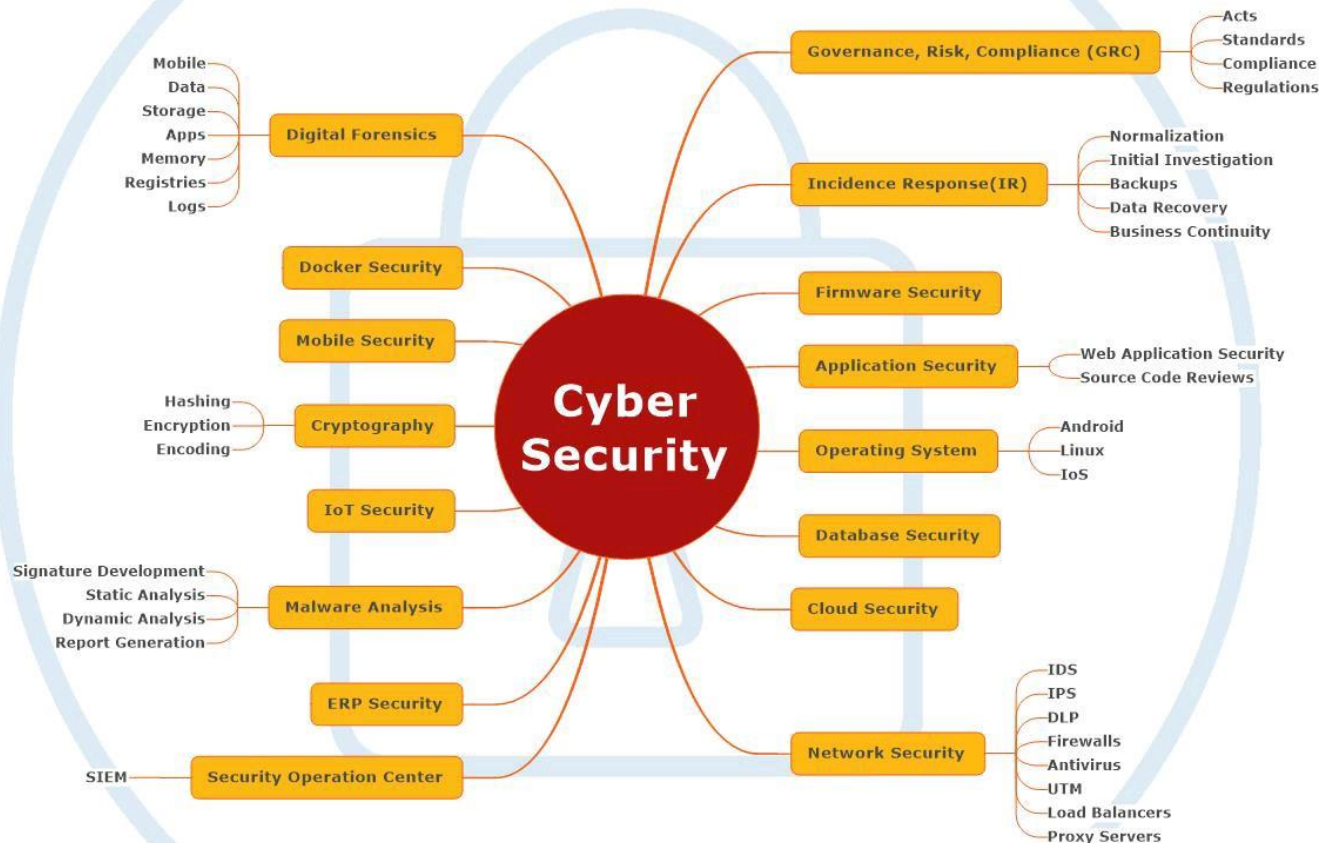# Basic Pre-requisites for a Cyber Security Career

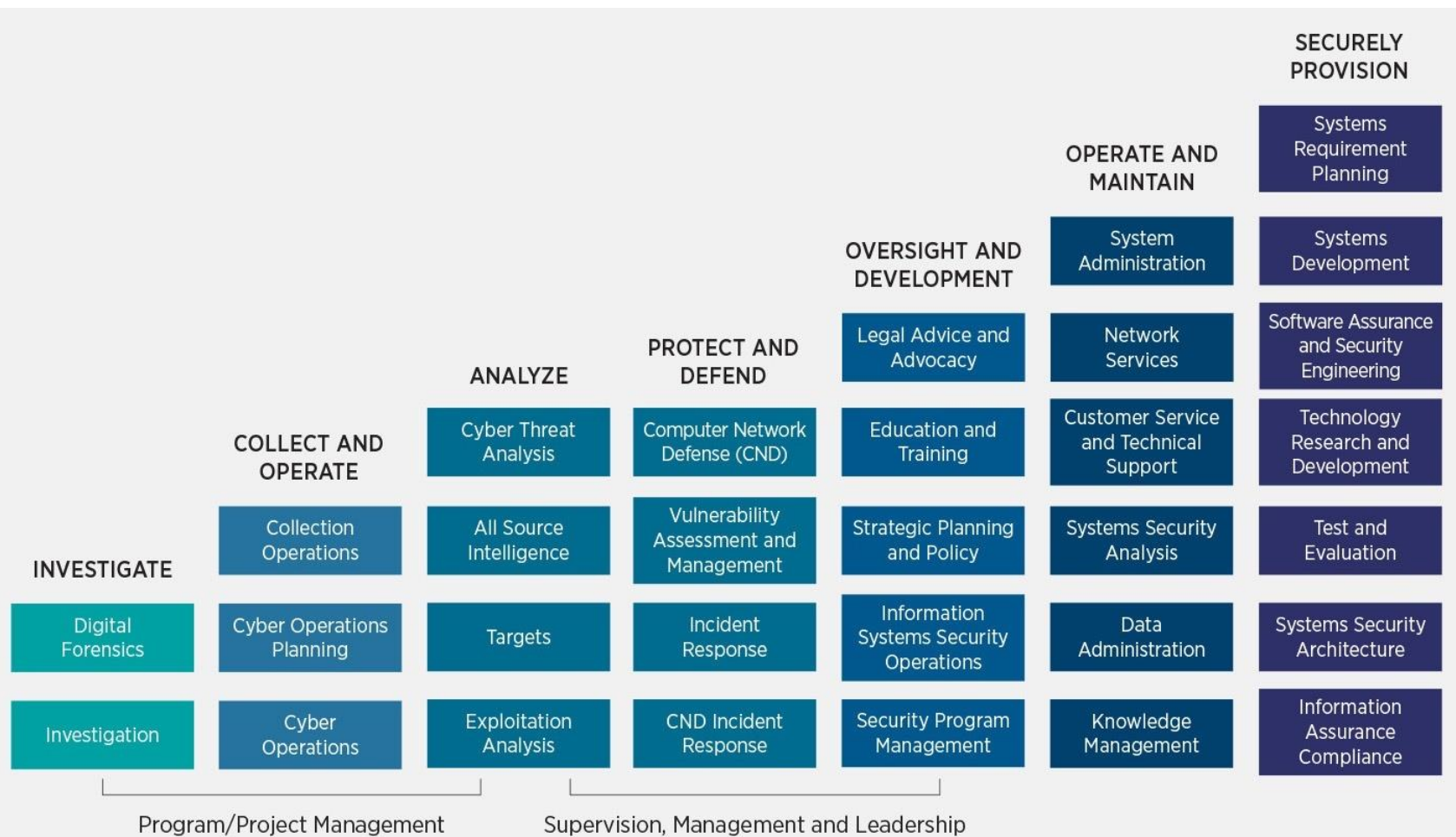# There has never been a better time to consider a cyber security career!

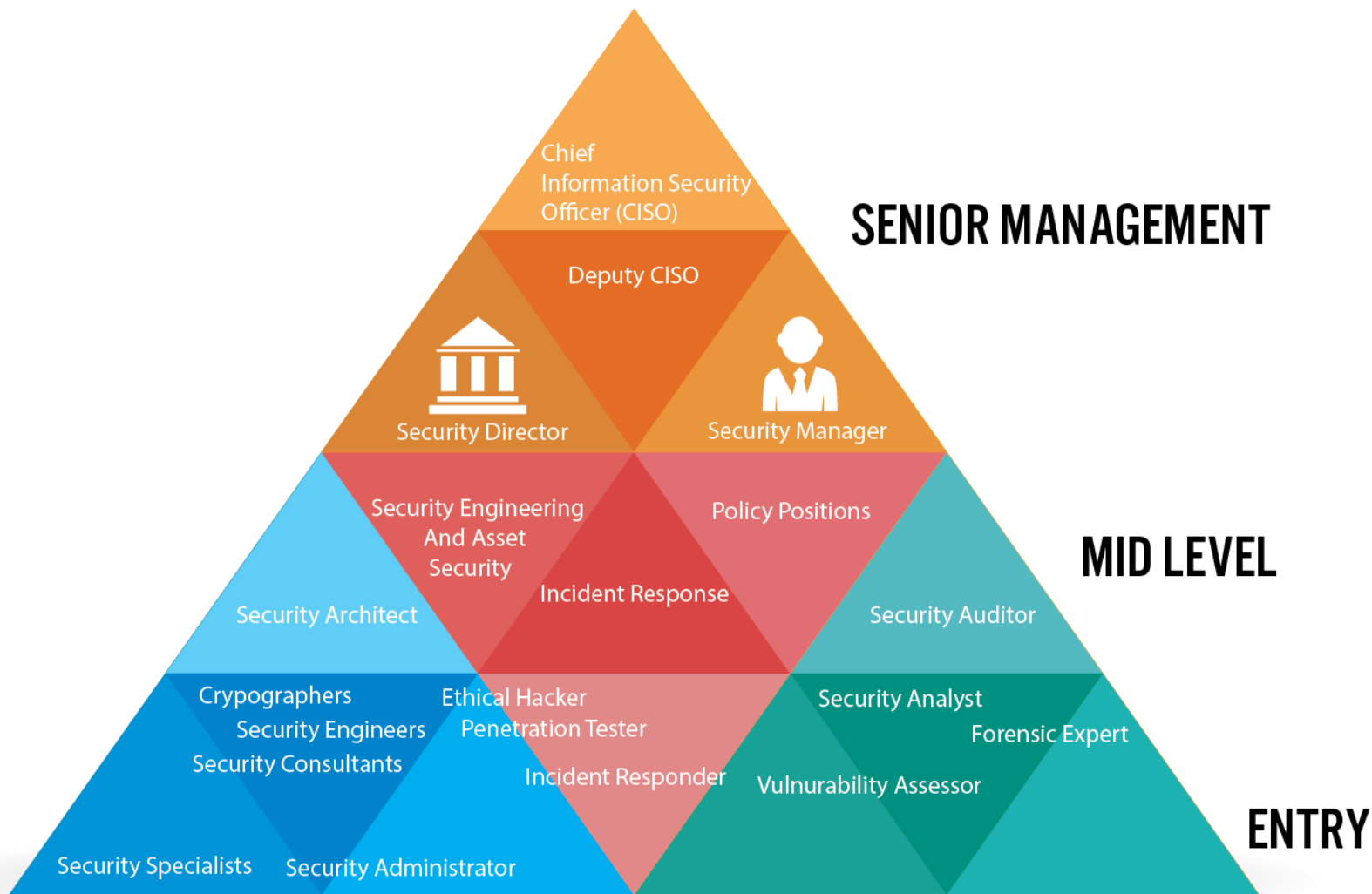https://www.cybersecurityeducation.org/careers/

Cybersecurity Domains

Security Architecture
- CASB
- Federated Identity
- Cloud Security
- Data Protection
- Network Design
- Secure Application Development
- Baseline Configuration
- Secure System Build
- Access Control
- Identity Management
  - Privileged Access Management
  - Identity & Access Management
- Security Engineering
- Cryptography

Framework and Standard
- COBIT
- ISO/IEC
- SANS/CSC
- NIST

Physical Security

Risk Assessment
- Vulnerability scan
- Assets Inventory
- 4th Party Risk
- 3rd Party Risk
- Blueteam
  - Social Engineering
- Penetration test
- Redteam
  - Application
  - Infrastructure
- Source Code Scan
  - Blackbox
  - Whitebox
- Data-Centric Risk Assessment
  - Data-Flow Map

Career Development
- Certification
- Conferences
- Training
- Peer Groups
- Self Study

Governance
- Industry Specific
- Laws and Regulations
  - Federal
  - State
- Executive Management Involvement
- Audit
- Risk Informed
- Reports and Scorecards
- Company's Written Supervisory Procedures (WSPs)
  - Policy
  - Procedure
  - Standard
  - Guideline
- Compliance & Enforcement
- KPIs/KRIs

Security Operation
- DR
- Recovery
- Detection
- Protection
- BCP
- Prevention
- SIEM
- Active Defense
- SOC
- Vulnerability Management
- Data Leakage
- Breach Notification
- Incident Response
- Containment
- Investigation
- Eradication
- Forensics

User Education
- Training (new skills)
- Awareness (reinforcement)

Threat Intelligence
- External
- Internal
- Contextual
- IOCs
- Intel. Sharing

Cyber Security

Governance, Risk, Compliance (GRC)
- Acts
- Standards
- Compliance
- Regulations

Digital Forensics
- Mobile
- Data
- Storage
- Apps
- Memory
- Registries
- Logs

Incidence Response(IR)
- Normalization
- Initial Investigation
- Backups
- Data Recovery
- Business Continuity

Docker Security

Firmware Security

Mobile Security

Application Security
- Web Application Security
- Source Code Reviews

Cryptography
- Hashing
- Encryption
- Encoding

Operating System
- Android
- Linux
- IoS

IoT Security

Database Security

Malware Analysis
- Signature Development
- Static Analysis
- Dynamic Analysis
- Report Generation

Cloud Security

ERP Security

Network Security
- IDS
- IPS
- DLP
- Firewalls
- Antivirus
- UTM
- Load Balancers
- Proxy Servers

Security Operation Center
- SIEM

Prepared by
Shiva Kumar M V
Cycops Information Security Services

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SECURELY PROVISION
- Systems Requirement Planning
- Systems Development
- Software Assurance and Security Engineering
- Technology Research and Development
- Test and Evaluation
- Systems Security Architecture
- Information Assurance Compliance

OPERATE AND MAINTAIN
- System Administration
- Network Services
- Customer Service and Technical Support
- Systems Security Analysis
- Data Administration
- Knowledge Management

OVERSIGHT AND DEVELOPMENT
- Legal Advice and Advocacy
- Education and Training
- Strategic Planning and Policy
- Information Systems Security Operations
- Security Program Management

PROTECT AND DEFEND
- Computer Network Defense (CND)
- Vulnerability Assessment and Management
- Incident Response
- CND Incident Response

ANALYZE
- Cyber Threat Analysis
- All Source Intelligence
- Targets
- Exploitation Analysis

COLLECT AND OPERATE
- Collection Operations
- Cyber Operations Planning
- Cyber Operations

INVESTIGATE
- Digital Forensics
- Investigation

Program/Project Management

Supervision, Management and Leadership

Source: This framework was developed by the joint efforts of NIST, DHS and OPM through the NICE project.

Evolving Cyber Security Titles & Roles

1. **Application Security Engineer**– Develop secure software / apps.	13. **Cryptographer** – Develop systems to encrypt sensitive information.
2. **Artificial Intelligence Security Specialist** – Use AI to combat cybercrime.	14. **Cyber Intelligence Specialist** – Analyze cyber threats and defend against them.
3. **Automotive Security Engineer** – Protect connected cars from cyber intrusions.	15. **Cyber Operations Specialist** – Conduct offensive cyberspace operations.
4. **Blockchain Developer / Engineer** – Code the future of secure transactions.	16. **Cybercrime Investigator** – Solve crimes conducted in cyberspace.
5. **Blue Team Member** – Design defensive measures / harden operating systems.	17. **Cybersecurity Hardware Engineer** – Develop security for computer hardware.
6. **Bug Bounty Hunter** – Freelance hackers find defects and exploits in code.	18. **Cybersecurity Lawyer** – Attorney focused on info/cyber security and cybercrime.
7. **Cyber Insurance Policy Specialist** – Consult on cyber risk and liability protection.	19. **Cybersecurity Software Developer / Engineer** – Bake security into applications.
8. **Chief Information Security Officer (CISO)** – Head of cybersecurity.	20. **Data Privacy Officer** – Ensure legal compliance related to data protection.
9. **Chief Security Officer (CSO)** – Head of physical/info/cyber security.	21. **Data Recovery Specialist** – Recover hacked data from digital devices.
10. **Cloud Security Architect** – Secure apps and data in the cloud.	22. **Data Security Analyst** – Protect information on computers and networks.
11. **Counterespionage analyst** – Thwart cyber spies from hostile nation states.	23. **Digital Forensics Analyst** – Examine data containing evidence of cybercrimes.
12. **Cryptanalyst** – Decipher coded messages without a cryptographic key.	24. **Disaster Recovery Specialist** – Plan for and respond to data and system catastrophes.

SENIOR MANAGEMENT

Chief Information Security Officer (CISO)

Deputy CISO

Security Director

Security Manager

MID LEVEL

Security Engineering And Asset Security

Policy Positions

Incident Response

Security Architect

Security Auditor

Crypographers
Security Engineers
Security Consultants

Ethical Hacker
Penetration Tester

Security Analyst

Forensic Expert

Incident Responder

Vulnurability Assessor

ENTRY

Security Specialists

Security Administrator

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Career Map for Information Security

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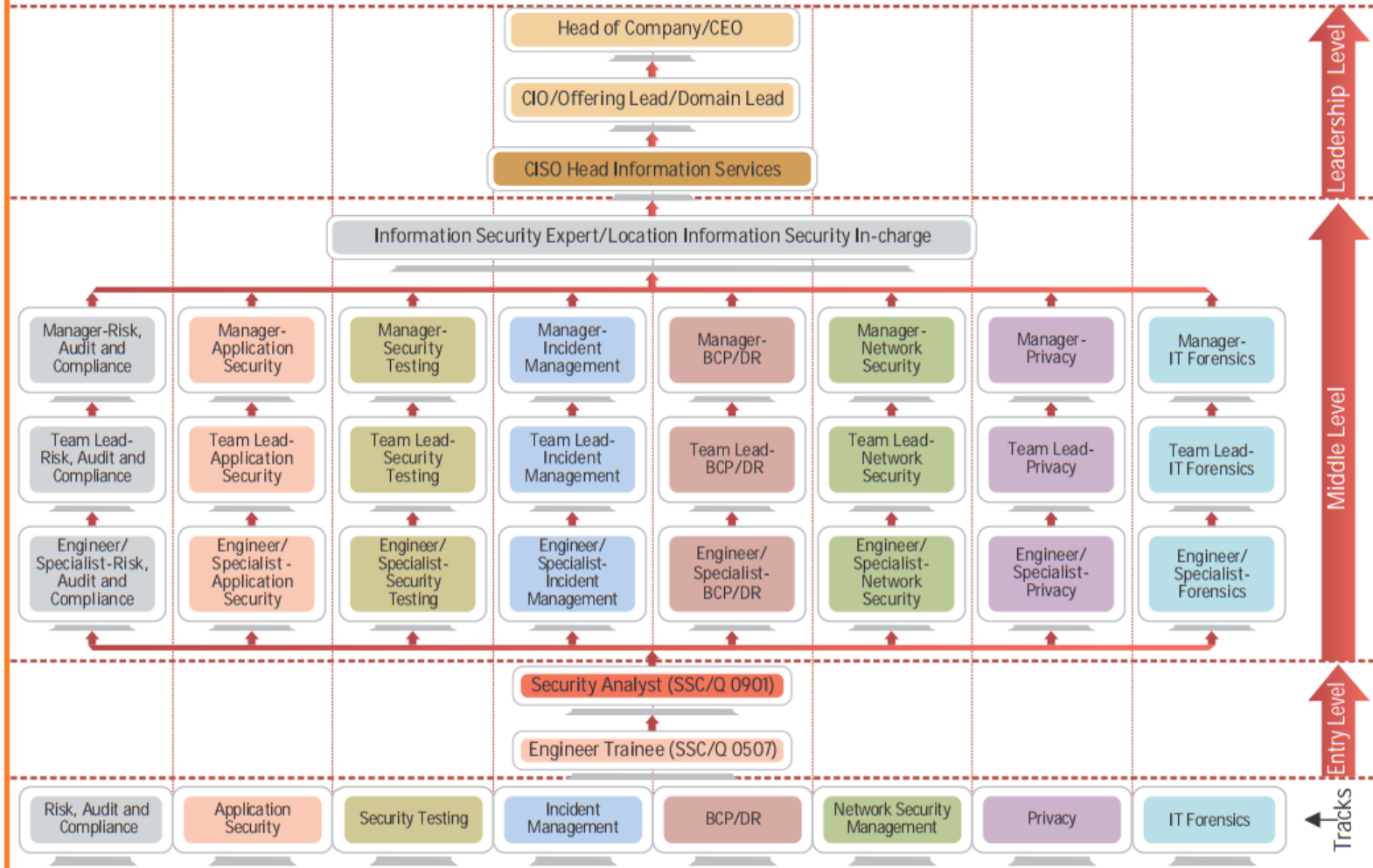
10 COOLEST JOBS IN CYBERSECURITY

WHY THEY MAKE A DIFFERENCE AND HOW TO QUALIFY FOR THEM

Initial Jobs With Lots of Advancement Opportunities

1 DIGITAL FORENSIC ANALYST; INVESTIGATOR

"The thrill of the hunt! It's CSI for cyber geeks! You never encounter the same crime twice."

You are the detective in the world of cybersecurity – searching computers and networks for evidence in the wake of an incident.

2 PENETRATION TESTER FOR SYSTEMS AND NETWORKS

"Be a hacker, but do it legally and get paid a lot of money!"

You look for security vulnerabilities in target systems and networks to help enterprises improve their security.

3 APPLICATION PEN TESTER

"We desperately need more of this, application security has been such a black hole for so long."

You're a programming/security wizard; test applications before deployment so they don't present opportunities for intruders.

4 SECURITY OPERATIONS CENTER (SOC) ANALYST

"The fire ranger. Catch the initial blaze, or there goes the forest."

With an eye for detail and anomalies, you see things most others miss. Active prevention, active detection, active monitoring, active response.

5 CYBER DEFENDER; SECURITY ENGINEER (ENTERPRISE AND ICS)

"A leg up on your system admin and engineering buddies; talk shop with them but you are saving the world from the bad guys, too."

Implement/tune firewalls, IPS/IDS, patching, admin. rights, monitor-ing, application white listing, more

More Advanced Jobs – Open After A Few Years of Great Performance and Specialized Training

6 HUNTER; INCIDENT RESPONDER

"The secret agent of geekdom. You walk in and say 'OK I'll take it from here.'"

While everyone else is running around shouting "the system's dead," you have the sense and skills to rationally figure out why.

7 SECURITY ARCHITECT

"You get to design the solution, and not just for the perimeter."

You are very creative, on top of the game technically and the business; you design and build defensible systems and are part of a team of very adept people.

8 SECURITY SAVVY SOFTWARE DEVELOPER

"Coolest software developers"

You protect the whole dev team from making errors that will allow hackers to penetrate your organization and steal data. You are a programmer, but a programmer with special powers.
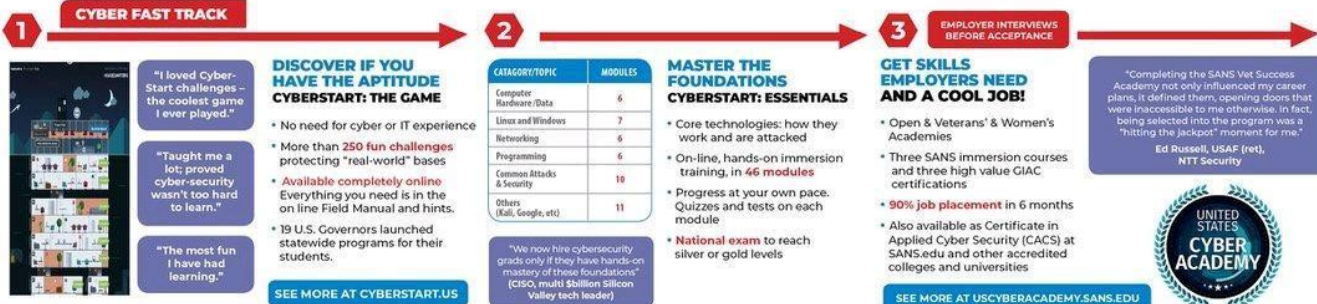
9 MALWARE ANALYST/ REVERSE ENGINEER

"The technical elite! Only go here if you have been called. You know who you are."

Look deep inside malicious software to understand the nature of the threat – how it got in, what flaw it exploited, what it is trying to do or has done.
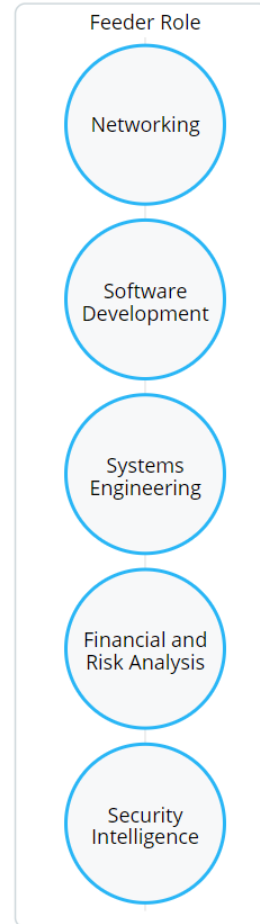
10 TECHNICAL DIRECTOR/CISO

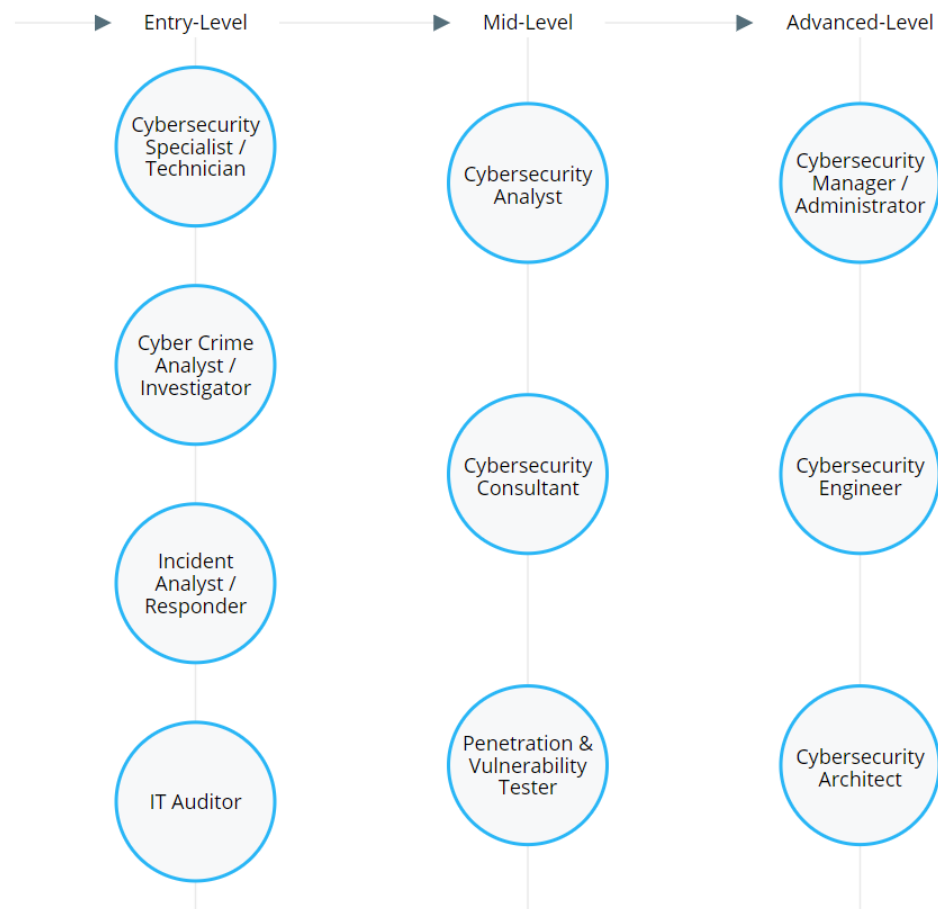"Making decisions; making things happen. That's coolness."

Top of the tech ladder. Strategic thinking; hands-on involvement in solution design/deployment; holds the keys to tech infrastructure and ability to contribute and influence
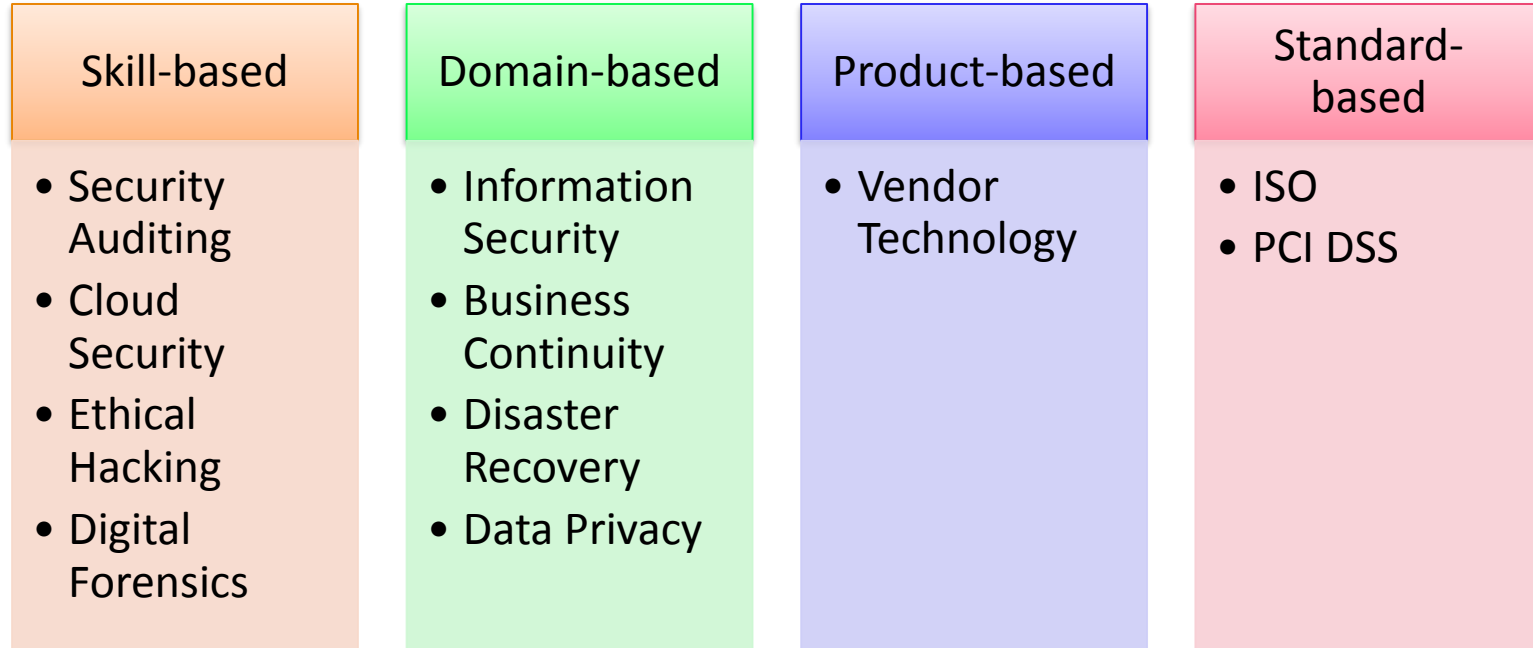
CYBER FAST TRACK

1

"I loved Cyber-Start challenges – the coolest game I ever played."

"Taught me a lot; proved cyber-security wasn't too hard to learn."

"The most fun I have had learning."

DISCOVER IF YOU HAVE THE APTITUDE
CYBERSTART: THE GAME

- No need for cyber or IT experience
- More than 250 fun challenges protecting "real-world" bases
- Available completely online Everything you need is in the on line Field Manual and hints.
- 19 U.S. Governors launched statewide programs for their students.

SEE MORE AT CYBERSTART.US

2

CATAGORY/TOPIC	MODULES
Computer Hardware/Data	6
Linux and Windows	7
Networking	6
Programming	6
Common Attacks & Security	10
Others (Kali, Google, etc)	11

"We now hire cybersecurity grads only if they have hands-on mastery of these foundations" (CISO, multi $billion Silicon Valley tech leader)

MASTER THE FOUNDATIONS
CYBERSTART: ESSENTIALS

- Core technologies: how they work and are attacked
- On-line, hands-on immersion training, in 46 modules
- Progress at your own pace. Quizzes and tests on each module
- National exam to reach silver or gold levels

3

EMPLOYER INTERVIEWS BEFORE ACCEPTANCE

GET SKILLS EMPLOYERS NEED AND A COOL JOB!

- Open & Veterans' & Women's Academies
- Three SANS immersion courses and three high value GIAC certifications
- 90% job placement in 6 months
- Also available as Certificate in Applied Cyber Security (CACS) at SANS.edu and other accredited colleges and universities

SEE MORE AT USCYBERACADEMY.SANS.EDU

"Completing the SANS Vet Success Academy not only influenced my career plans, it defined them, opening doors that were inaccessible to me otherwise. In fact, being selected into the program was a "hitting the jackpot" moment for me."

Ed Russell, USAF (ret), NTT Security

UNITED STATES CYBER ACADEMY

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Common Cybersecurity Feeder Roles ⓘ

Core Cybersecurity Roles ⓘ

Feeder Role → Entry-Level → Mid-Level → Advanced-Level

- Networking
- Software Development
- Systems Engineering
- Financial and Risk Analysis
- Security Intelligence

Entry-Level:
- Cybersecurity Specialist / Technician
- Cyber Crime Analyst / Investigator
- Incident Analyst / Responder
- IT Auditor

Mid-Level:
- Cybersecurity Analyst
- Cybersecurity Consultant
- Penetration & Vulnerability Tester

Advanced-Level:
- Cybersecurity Manager / Administrator
- Cybersecurity Engineer
- Cybersecurity Architect

Source: https://www.cyberseek.org/pathway.html

Security Certifications

Skill-based	Domain-based	Product-based	Standard-based
• Security Auditing • Cloud Security • Ethical Hacking • Digital Forensics	• Information Security • Business Continuity • Disaster Recovery • Data Privacy	• Vendor Technology	• ISO • PCI DSS

Level
- Beginners
- Intermediate
- Advanced

Orientation
- Technical
- Managerial
- Leadership

Which cybersecurity certification is for you?

Picking the right certification for you comes down to two factors:

- **Where are you in your career?**

- **What are you looking to achieve?**

V&A

Do SWOT Analysis of your Interests, Goals & Passion

S

O

Strengths

Opportunities

SWOT
Analysis

Weaknesses

Threats

W

T

Active Defense
Security Incident Response

Incident Handler
GCIH
Intrusion Analyst
GCIA
System Forensic Analyst
GCFE
Reverse Malware Engineering
GREM
Network Forensic Analyst
GNFA

Governance and Management
CISM

Audit, Control & Compliance
CISA, ISO27001, PCI-QSA

Threat Intelligence
Cyber Threat Information
Collection, Analyze and
Disseminate

FOR578: Training from SANS

Technology Risk Management
Assess threats and
identify IT solutions.

CISSP

Architecture & Engineering
Design and Implement IT
solutions, aligned to business risks.

SABSA, CISSP-ISSAP, CISSP-ISSEP

Secure Software Lifecycle Professional
CSSLP

Industrial Cyber Security
GICSP, GRID

Offensive Security
Discover weakness in the IT
system through simulated attacks

OSCP, OSWP, OSWE GPEN, CEH, GMOB

Passive Defense
Preventive Security Operations -
Policy and Device Management

GSEC, GMON, COMPTIA Security+

Cloud Security
CCSP

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Information Security Certifications

ISO STANDARDS
relevant to Information Security Professionals

ISO/IEC 27000-SERIES

ISO/IEC 27000
Information security management systems — Overview and vocabulary.

ISO/IEC 27001
Information technology - Security Techniques - Information security management systems — Requirements.

ISO/IEC 27002
Code of practice for information security management.

ISO/IEC 27003
Information security management system implementation guidance.

ISO/IEC 27004
Information security management— Measurement.

ISO/IEC 27013
Guideline on the integrated implementation of ISO/IEC 27001 and ISO/IEC 20000-1.

ISO/IEC 27014
Information security governance.

ISO/IEC 27017
Code of practice for information security controls based on ISO/IEC 27002 for cloud services.

ISO/IEC 27031
Guidelines for information and communication technology readiness.

ISO/IEC 27032
Guideline for cybersecurity.

ISO/IEC 27033-1
Network security - Overview and concepts.

ISO/IEC 27033-2
Network security - Guidelines for the design and implementation of network security.

ISO/IEC 27033-2
Network security - Guidelines for the design and implementation of network security.

ISO/IEC 27033-3
Network security - Reference networking scenarios - Threats, design techniques and control issues.

ISO/IEC 27033-4
Network security - Securing communications between networks using security gateways.

ISO/IEC 27033-5
Network security - Securing communications across networks using Virtual Private Networks (VPNs).

ISO/IEC 27034-1
Application security - Guideline for application security.

ISO/IEC 27034-2
Application security - Organization normative framework.

ISO/IEC 27035
Information security incident management.

ISO/IEC 27036-1
Information security for supplier relationships -Overview and concepts.

ISO/IEC 27036-2
Information security for supplier relationships -Overview and concepts.

ISO/IEC 27036-3
Information security for supplier relationships -Guidelines for information and communication technology.

FOR INFORMATION SECURITY PROFESSIONALS ▼

IT ASSET MANAGEMENT

ISO/IEC 19770-1:2012
Establishes a baseline for an integrated set of processes for Software Asset Management (SAM).

BUSINESS CONTINUITY

ISO 22301:2012
Societal security – Business continuity management systems, helps organizations to be better prepared to handle disruption of any type.

ITIL / ISO 20000

ISO/IEC 20000-1:2011
Information technology -- Service management - Service management system requirements.

ISO/IEC 20000-2:2012
Information technology -- Service management - Guidance on the application of service management systems.

ISO/IEC 20000-3:2012
Information technology - Service management -Guidance on scope definition and applicability of ISO/IEC 20000-1.

PHYSICAL SECURITY

ISO/IEC TS 30104:2015
Information Technology - Security Techniques - Physical Security Attacks, Mitigation Techniques and Security Requirements.

IDENTITY MANAGEMENT

ISO/IEC 24760-1:2011
Information Technology - Security techniques - A framework for identity management - Terminology and concepts.

VULNERABILITY HANDLING & DISCLOSURE

ISO 29147
Information technology - Security techniques - Vulnerability disclosure.

ISO 30111
Information technology - Security techniques - Vulnerability handling processes.

SPECIALIZED READING ▼

FOR RISK MANAGEMENT

ISO/IEC 27005
Information security risk management.

FOR AUDITORS

ISO/IEC 27006
Requirements for bodies providing audit and certification of information security management systems.

ISO/IEC 27007
Guidelines for information security management systems auditing (focused on the management system).

ISO/IEC TR 27008
Guidance for auditors on ISMS controls (focused on the information security controls).

FOR SOC & INCIDENT REPORTERS

ISO/IEC 27037
Guidelines for identification, collection, acquisition and preservation of digital evidence.

OTHER STANDARS TO BE AWARE OF ▼

Industry-specific ISO 27000 standards
Such as ISO/IEC 27011:2016 for telecommunications organisations.

Standards Australia HB 167
Security Risk Management.

HB 231
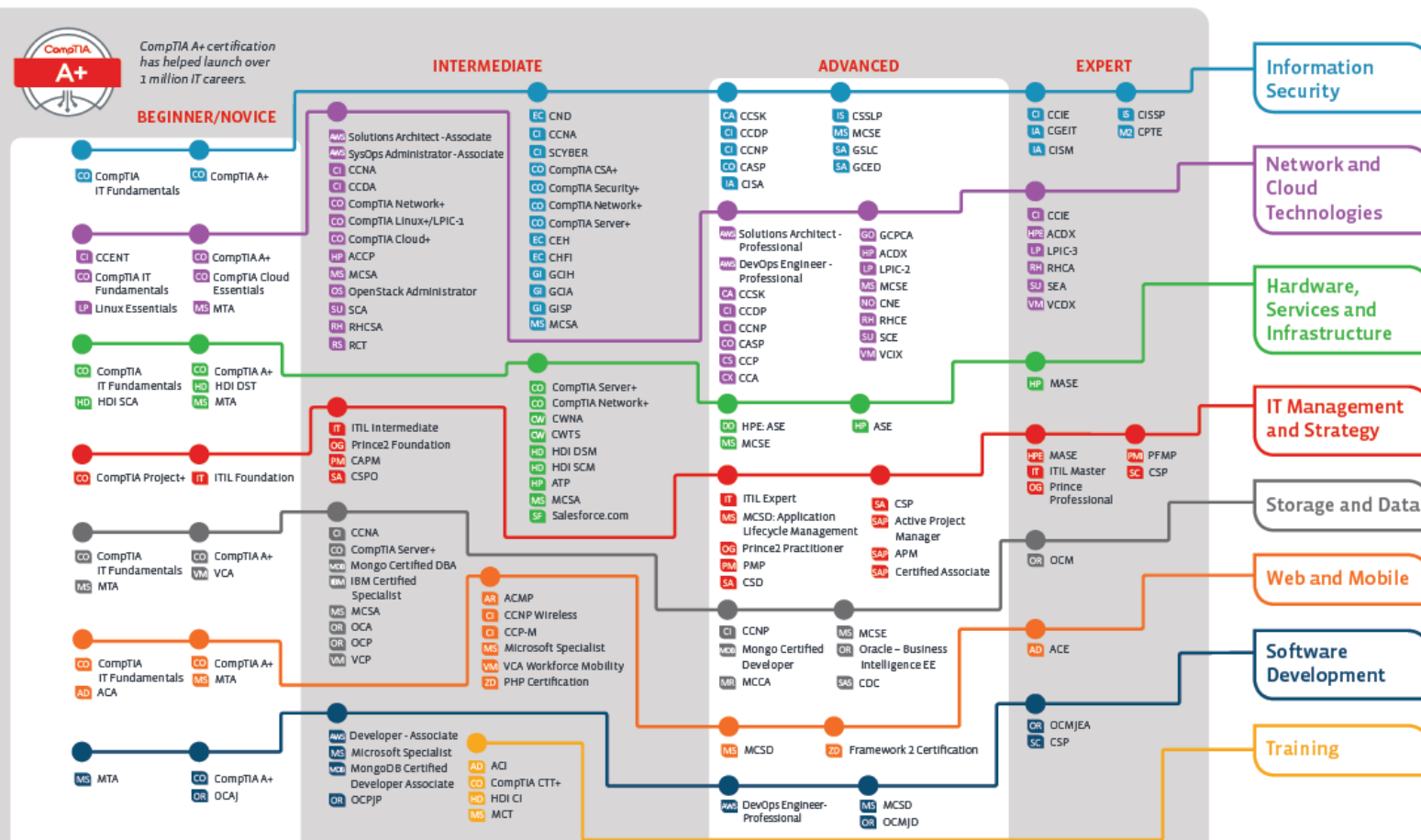Information Security Risk Management Guidelines.

HB 221
Business Continuity Management.

IT Certification Roadmap

Explore the possibilities with the CompTIA Interactive IT Roadmap at: CompTIA.org/CertsRoadmap

CompTIA

Certifications validate expertise in your chosen career.

CompTIA A+

CompTIA A+ certification has helped launch over 1 million IT careers.

BEGINNER/NOVICE · **INTERMEDIATE** · **ADVANCED** · **EXPERT**

Information Security

- CO CompTIA IT Fundamentals
- CO CompTIA A+

- EC CND
- CI CCNA
- GI SCYBER
- CO CompTIA CSA+
- CO CompTIA Security+
- CO CompTIA Network+
- CO CompTIA Server+
- EC CEH
- EC CHFI
- GI GCIH
- GI GCIA
- GI GISP
- MS MCSA

- CA CCSK
- CI CCDP
- CI CCNP
- CO CASP
- IA CISA
- IS CSSLP
- MS MCSE
- SA GSLC
- SA GCED

- CI CCIE
- IA CGEIT
- IA CISM
- IS CISSP
- M2 CPTE

Network and Cloud Technologies

- CI CCENT
- CO CompTIA IT Fundamentals
- LP Linux Essentials
- CO CompTIA A+
- CO CompTIA Cloud Essentials
- MS MTA

- AWS Solutions Architect - Associate
- AWS SysOps Administrator - Associate
- CI CCNA
- CI CCDA
- CO CompTIA Network+
- CO CompTIA Linux+/LPIC-1
- CO CompTIA Cloud+
- HP ACCP
- MS MCSA
- OS OpenStack Administrator
- SU SCA
- RH RHCSA
- RS RCT

- AWS Solutions Architect - Professional
- AWS DevOps Engineer - Professional
- CA CCSK
- CI CCDP
- CI CCNP
- CO CASP
- CS CCP
- CX CCA

- GO GCPCA
- HP ACDX
- LP LPIC-2
- MS MCSE
- NO CNE
- RH RHCE
- SU SCE
- VM VCIX

- CI CCIE
- HPE ACDX
- LP LPIC-3
- RH RHCA
- SU SEA
- VM VCDX

Hardware, Services and Infrastructure

- CO CompTIA IT Fundamentals
- HD HDI SCA
- CO CompTIA A+
- HD HDI DST
- MS MTA

- CO CompTIA Server+
- CO CompTIA Network+
- CW CWNA
- CW CWTS
- HD HDI DSM
- HD HDI SCM
- HP ATP
- MS MCSA
- SF Salesforce.com

- DO HPE: ASE
- MS MCSE

- HP ASE

- HP MASE

IT Management and Strategy

- CO CompTIA Project+
- IT ITIL Foundation

- IT ITIL Intermediate
- OG Prince2 Foundation
- PM CAPM
- SA CSPO

- IT ITIL Expert
- MS MCSD: Application Lifecycle Management
- OG Prince2 Practitioner
- PM PMP
- SA CSD

- SA CSP
- SAP Active Project Manager
- SAP APM
- SAP Certified Associate

- HPE MASE
- IT ITIL Master
- OG Prince Professional
- PM PFMP
- SC CSP

Storage and Data

- CO CompTIA IT Fundamentals
- MS MTA
- CO CompTIA A+
- VCD VCA

- CI CCNA
- CO CompTIA Server+
- VCD Mongo Certified DBA
- IBM IBM Certified Specialist
- MS MCSA
- OR OCA
- OR OCP
- VM VCP

- CI CCNP
- VCD Mongo Certified Developer
- MR MCCA

- MS MCSE
- OR Oracle – Business Intelligence EE
- SAS CDC

- OR OCM

Web and Mobile

- CO CompTIA IT Fundamentals
- AD ACA
- CO CompTIA A+
- MS MTA

- AR ACMP
- CI CCNP Wireless
- CI CCP-M
- MS Microsoft Specialist
- VM VCA Workforce Mobility
- ZD PHP Certification

- AD ACE

Software Development

- MS MTA
- CO CompTIA A+
- OR OCAJ

- AWS Developer - Associate
- MS Microsoft Specialist
- VCD MongoDB Certified Developer Associate
- OR OCPJP

- AD ACI
- CO CompTIA CTT+
- HD HDI CI
- MS MCT

- MS MCSD
- ZD Framework 2 Certification

- AWS DevOps Engineer - Professional
- MS MCSD
- OR OCMJD

- OR OCMJEA
- SC CSP

Training

Computer literacy certifications validating end user skills include IC3 and ECDL/ICDL.

Updated 3/2017

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CO CompTIA Certifications

BEGINNER/NOVICE
CompTIA A+
CompTIA Cloud Essentials
CompTIA IT Fundamentals+

INTERMEDIATE
CompTIA Cloud+
CompTIA CTT+: Certified Technical Trainer
CompTIA Linux+/LPIC-1
CompTIA Network+
CompTIA Project+
CompTIA Security+
CompTIA Server+

ADVANCED
CompTIA CySA+: Cybersecurity Analyst
CompTIA PenTest+

EXPERT
CASP: CompTIA Advanced Security Practitioner

AD Adobe

BEGINNER/NOVICE
ACA: Adobe Certified Associate
INTERMEDIATE
ACI: Adobe Certified Instructor
EXPERT
ACE: Adobe Certified Expert

AR Aruba

INTERMEDIATE
ACMP: Aruba Certified Mobility Professional

AWS Amazon Web Services

INTERMEDIATE
AWS: Certified Solutions Architect - Associate
AWS: Certified SysOps Administrator - Associate
ADVANCED
AWS: Certified Solutions Architect - Professional
AWS: Certified DevOps Engineer - Professional

CA Cloud Security Alliance

ADVANCED
CCSK: Certificate of Cloud Security Knowledge

CI Cisco Systems

BEGINNER/NOVICE
CCENT: Cisco Certified Entry Networking Technician
INTERMEDIATE
CCDA: Cisco Certified Design Associate
CCNA: Cisco Certified Network Associate

ADVANCED
CCDP: Cisco Certified Design Professional
CCNP: Cisco Certified Network Professional
EXPERT
CCIE: Cisco Certified Internetwork Expert
SCYBER: Securing Cisco Network with Threat Detection and Analysis

CS The Cloud School

ADVANCED
CCP: Cloud Certified Professional

CW CWNP

INTERMEDIATE
CWNA: Certified Wireless Network Administrator
CWTS: Certified Wireless Technology Specialist

CX Citrix

INTERMEDIATE
CCIA: Citrix Certified Integration Architect
ADVANCED
CCA: Citrix Certified Administrator

EC EC Council

INTERMEDIATE
CHFI: Computer Hacking Forensic Investigator
CEH: Certified Ethical Hacker

GI GIAC

INTERMEDIATE
GCIH: GIAC Certified Incident Handler
GISP: GIAC Information Security Professional
GSEC: GIAC Security Essentials

GO Google

BEGINNER/NOVICE
GACA: Google Apps Certified Administrator
ADVANCED
GCPCA: Google Certified Professional Cloud Architect

HC Huawei

INTERMEDIATE
HCNA: Huawei Certified Network Associate
ADVANCED
HCNP: Huawei Certified Network Professional
EXPERT
HCIE: Huawei Certified Internetwork Expert

HD HDI Global Certification

BEGINNER/NOVICE
HDI DST: HDI Desktop Support Technician
HDI SCA: HDI Support Center Analyst
INTERMEDIATE
HDI CI: HDI Certified Instructor
HDI DSM: HDI Desktop Support Manager
HDI SCM: HDI Support Center Manager

HP Hewlett-Packard

EXPERT
ASE/CSE: Accredited Systems Engineer and Certified Systems Engineer

IA ISACA

ADVANCED
CISA: Certified Information Systems Auditor
EXPERT
CGEIT: Certified in the Governance of Enterprise IT
CISM: Certified Information Security Manager

IBM IBM

INTERMEDIATE
IBM Certified Specialist

IS ISC²

ADVANCED
CSSLP: Certified Secure Software Lifecycle Professional
EXPERT
CISSP: Certified Information Systems Security Professional

IT ITIL

BEGINNER/NOVICE
ITIL Foundation
INTERMEDIATE
ITIL Intermediate
ADVANCED
ITIL Expert
EXPERT
ITIL Master

LP Linux Professional Institute

BEGINNER/NOVICE
Linux Essentials
INTERMEDIATE
LPIC-1 Linux Professional
ADVANCED
LPIC-2 Linux Professional
EXPERT
LPIC-3 Linux Professional

M2 Mile2

EXPERT
CPTE: Certified Penetration Testing Engineer

MS Microsoft

BEGINNER/NOVICE
MTA: Microsoft Technology Associate
INTERMEDIATE
MCSA: Microsoft Certified Solutions Associate
MCSA: Windows Server 2012
MCT: Microsoft Certified Trainer

ADVANCED
MCSD: Microsoft Certified Solutions Developer
MCSE: Microsoft Certified Solutions Expert
MS: Developing Microsoft Azure Solutions
MS: Implementing Microsoft Azure Infrastructure Solutions
MCSD: Application Lifecycle Management
MCSE: Microsoft Certified Solutions Expert Server Infrastructure

MU MongoDB University

INTERMEDIATE
MongoDB Certified Developer Associate

NO Novell

ADVANCED
CNE: Certified Novell Engineer

OG Office of Government Commerce/Prince2

INTERMEDIATE
Prince2 Foundation: Office of Government Commerce (OGC) Prince2 Foundation
EXPERT
Prince2 Practitioner: Office of Government Commerce (OGC) Prince2 Practitioner

OR Oracle

BEGINNER/NOVICE
OCAJ: Oracle Certified Associate, Java SE 6/SE 5
INTERMEDIATE
OCA: Oracle Certified Associate
OCP: Oracle Certified Professional
OCPJP: Oracle Certified Professional, Java SE 6/SE 5 Programmer
ADVANCED
OCMJD: Oracle Certified Master, Java SE6 Developer
EXPERT
OCM: Oracle Certified Master
OCMJEA: Oracle Certified Master, Java EE 5 Enterprise Architect

PM PMI

INTERMEDIATE
CAPM: PMI Certified Associate in Project Management
ADVANCED
PMP: PMI Project Professional

RH Red Hat

INTERMEDIATE
RHCSA: Red Hat Certified System Administrator
ADVANCED
RHCE: Red Hat Certified Engineer
EXPERT
RHCA: Red Hat Certified Architect

RS Rackspace

INTERMEDIATE
RCT: Rackspace Certified Technician

SC Scrum Alliance

EXPERT
CSP: Certified Scrum Professional

SF Salesforce.com

INTERMEDIATE
SALESFORCE.COM: Salesforce.com Certified Administrator

SU SUSE

INTERMEDIATE
SCA: SUSE Certified Administrator
ADVANCED
SCE: SUSE Certified Engineer
EXPERT
SEA: SUSE Enterprise Architect

VM VMware

BEGINNER/NOVICE
VCA: VMware Certified Associate
INTERMEDIATE
VCP: VMware Certified Professional
VMware Certified Associate Workforce Mobility
ADVANCED
VCIE: VMware Certified Implementation Expert
EXPERT
VCDE: VMware Certified Design Expert
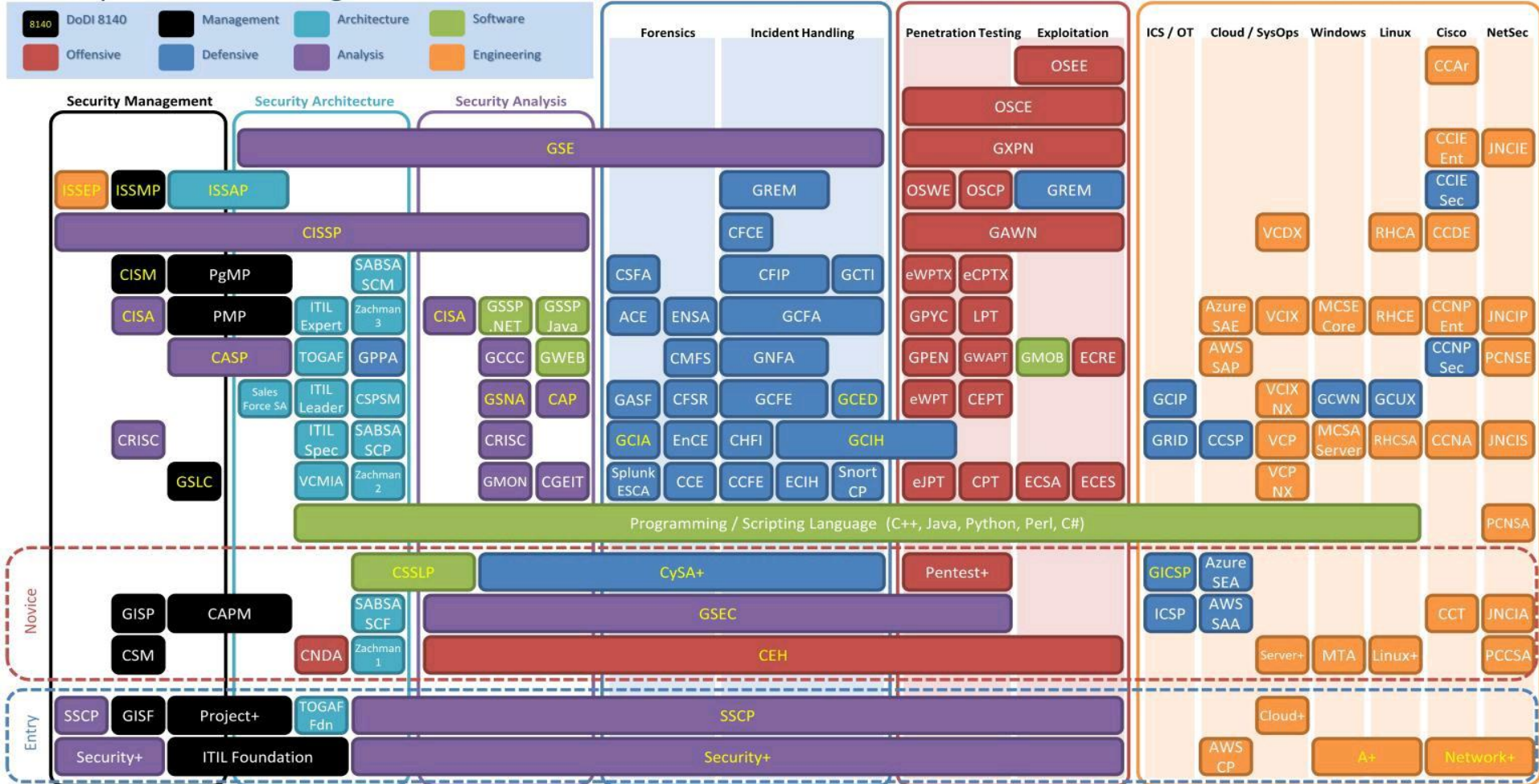
ZD Zend

INTERMEDIATE
PHP Certification
ADVANCED
Framework 2 Certification

CompTIA.

Source: https://certification.comptia.org/docs/default-source/downloadablefiles/it-certification-roadmap.pdf

Security Certification Progression Chart 2020

Legend:
- 8140 — DoDI 8140
- Management (black)
- Architecture (teal)
- Software (green)
- Offensive (red)
- Defensive (blue)
- Analysis (purple)
- Engineering (orange)

Column groupings
- Security Management | Security Architecture | Security Analysis
- Defensive Operations: Forensics | Incident Handling
- Offensive Operations: Penetration Testing | Exploitation
- Security Engineering: ICS / OT | Cloud / SysOps | Windows | Linux | Cisco | NetSec

Certifications listed

Security Management: ISSEP, ISSMP, ISSAP, CISSP, CISM, CISA, PgMP, PMP, CASP, CRISC, GSLC, GISP, CAPM, CSM, SSCP, GISF, Project+, Security+, ITIL Foundation

Security Architecture: SABSA SCM, ITIL Expert, Zachman 3, TOGAF, GPPA, Sales Force SA, ITIL Leader, CSPSM, ITIL Spec, SABSA SCP, VCMIA, Zachman 2, CSSLP, SABSA SCF, CNDA, Zachman 1, TOGAF Fdn

Security Analysis: GSE, CISA, GSSP .NET, GSSP Java, GCCC, GWEB, GSNA, CAP, CRISC, GMON, CGEIT

Defensive Operations — Forensics / Incident Handling: GREM, CFCE, CSFA, CFIP, GCTI, ACE, ENSA, GCFA, CMFS, GNFA, GASF, CFSR, GCFE, GCED, GCIA, EnCE, CHFI, GCIH, Splunk ESCA, CCE, CCFE, ECIH, Snort CP, CySA+, GSEC, CEH, SSCP, Security+

Offensive Operations — Penetration Testing / Exploitation: OSEE, OSCE, GXPN, OSWE, OSCP, GREM, GAWN, eWPTX, eCPTX, GPYC, LPT, GPEN, GWAPT, GMOB, ECRE, eWPT, CEPT, eJPT, CPT, ECSA, ECES, Pentest+

Security Engineering:
- ICS / OT: GCIP, GRID, GICSP, ICSP
- Cloud / SysOps: Azure SAE, AWS SAP, CCSP, Azure SEA, AWS SAA, Cloud+, AWS CP
- Windows: VCDX, VCIX, MCSE Core, VCIX NX, VCP, MCSA Server, VCP NX, MCSE, GCWN, Server+, MTA
- Linux: RHCA, RHCE, RHCSA, GCUX, Linux+
- Cisco: CCAr, CCIE Ent, CCIE Sec, CCDE, CCNP Ent, CCNP Sec, CCNA, CCT, A+
- NetSec: JNCIE, JNCIP, PCNSE, JNCIS, PCNSA, JNCIA, PCCSA, Network+

Programming / Scripting Language (C++, Java, Python, Perl, C#)

Tiers (left margin): Novice, Entry

https://pauljerimy.com/security-certification-roadmap/

40

THE TOP 10 HIGHEST PAYING CERTIFICATIONS TO PURSUE IN 2020

1	2	3	4	5	6	7	8	9	10
CISSP®	AWS Certified Solutions Architect	Google Certified Professional Cloud Architect	Big Data Certification	Data Science Certification	CRISC	CISM	PMP®	CEH	CSM

https://www.icertglobal.com/top-10-highest-paying-certifications-to-target-in-2020/detail

ISO Certifications

- BSI https://www.bsigroup.com/en-IN/ISOIEC-27001-Information-Security/Training-courses-for-ISO-27001/

S.No	Certification Levels	Duration
1	Lead Auditor	5 days
2	Implementer	3 days
3	Internal Auditor	1 day

- BSI https://www.bsigroup.com/en-IN/iso-27701-privacy-information-management/iso-27701-training-courses/

- Reference: ISO 27701:2019 https://www.iso.org/standard/71670.html

Data Privacy Job Roles

CHIEF PRIVACY OFFICER

VP – Data Protection | VP - Cross Border Data | Data Protection Officer | Director, Information Governance and Privacy | Director- International Privacy | Data Protection Director

Technical Program Manager, Privacy | Privacy Program Manager | Assistant Director, Privacy | Senior Counsel- Privacy

Counsel, Tech Policy | Data Protection Counsel | Privacy Architect | Data Protection Product Specialist | Data Security Architect | Sr. Privacy Consultant | Privacy Liaison Officers | Sr. Manager, Compliance & Privacy

Privacy Consultants | GDPR Consultants | Privacy Compliance Consultant | Privacy Manager | HIPAA Compliance Officer | Privacy Officers | Senior Associate, Privacy | Advertising, Privacy Associate | Cyber Privacy Policy Specialist | Privacy Compliance Manager

Data Privacy Analyst | Junior Privacy Analyst | Research Associate in Privacy | Privacy Technologist

DSCI
PROMOTING DATA PROTECTION
A NASSCOM® Initiative

DSCI Privacy Credentials

DCPP
DSCI Certified Privacy Professional

DCPLA
DSCI Certified Privacy Lead Assessor

For details visit:
https://www.dsci.in/content/certifications

Data Privacy Certifications

- EU GDPR Institute https://www.eugdpr.institute/gdpr-certification/

FAS Certification	The Foundation Certification: All you wanted to know about GDPR in One day with a total wall-to-wall implementation, execution and monitoring methodology based on the Regulation, ISO, and best practices
DPO Certification	Comprehensive DPO role & practical implementation guidance inclusive the accountability issues of all stakeholders incl. the Data Controller(s) and the Data Processor(s)
CEP Certification	3-day Certified Expert Professional (CEP) Seminar that includes hands-on guidance on how to implement adequate privacy, cyber and information security compliance program

Data Privacy Certifications

International Association of Privacy Professionals (IAPP) https://iapp.org/certify/programs/

CIPP

Practicing Privacy

CIPM

Operationalizing Privacy

CIPT

Engineering Privacy

CISO Mind Map

Business Enablement

Merger/Acquisition
- Acquisition Risk Management
- Integration Cost
- Identity Management

Process
- HR On Boarding/Termination
- Business Partnerships

Cloud Computing
- Cloud Architecture
- Strategy and Guidelines
- Cloud Risk Evaluation
- Compliance
- Ownership/Liability/Incidents
- SaaS Strategy
- Log Integration
- Virtualized Security Appliances

Mobile Technology
- Policy
- Technology
- Lost/Stolen Devices
- BYOD
- Mobile Apps Inventory

Selling InfoSec (Internal)
- Aligning with Corporate Objectives
- Continuous Mgmt Updates
- Innovation and Value Creation

Governance
- Strategy & Business Alignment
- Risk Mgmt Framework
- Resource Management
- Roles and Responsibilities
- Metrics and Reporting

Security Operations

Threat Prevention
- Network /Application Firewall
- Vulnerability Management
- Application Security
- IPS
- Identity Management
- Information Security Policy
- DLP
- Anti Malware, Anti-spam
- Proxy/Content Filtering
- Patching
- DDoS Protection
- Hardening guidelines
- Desktop Security
- Encryption SSL
- PKI

Threat Detection
- Log Analysis/correlation/SIEM
- Alerting (IDS/IPS, FIM, WAF, Antivirus, etc)
- NetFlow analysis
- DLP
- Threat hunting
- MSSP integration
- SOC Operations

Incident Management
- Incident Response
- Media Relations
- Incident Readiness
- Forensic Investigation
- Data Breach Preparation

Project Delivery Lifecycle
- Requirements
- Design
- Security Testing
- Certification and Accreditation

CISO JOB

Identity Management
- Credentialing
- Account Creation/Deletions
- Single Sign On (SSO. Simplified Sign On)
- Repository (LDAP/Active Directory)
- Federation
- 2-Factor Authentication
- Role-Based Access Control
- Ecommerce and Mobile Apps
- Password resets/Self-service
- HR Process Integration
- Integrating cloud-based identities

Security Architecture
- Network Segmentation
- Application Protection
- Defense-in-depth
- Remote Access
- Encryption Technologies
- Backup/Replication/Multiple Sites
- Cloud/Hybrid/Multiple Cloud Vendors

Budget
- Security Projects
- Business Case Development
- ROSI
- Alignment with IT Projects
- FTE and Contractors
- Balancing Budget for People. Trainings, and Tools/Technology

Compliance and Audits
- PCI
- SOX
- HPAA
- Regular Audits
- SSAE 16
- Other Compliance Needs

Legal & Human Resources
- Data Discovery
- Vendor Contracts
- Investigations/Forensics
- Integrating into IDM processes

Risk Management
- Physical Security
- Vulnerability Management
- Ongoing risk assessments/Pam Testing
- Integration to Project Delivery (PMD)
- Code Reviews
- Risk Assessment Methodology
- Policies and Procedures
- Associate Awareness
- Data Centric Approach
- IoT Technologies
- Operational Technologies

Source: http://rafeeqrehman.com/2015/05/17/the-latest-2015-ciso-mindmap-is-here/

An Overview of The Responsibilities and Ever Expanding Role of The CISO

By 2022, there will be a shortage of

1,800,000

Cybersecurity Professionals globally.

Source: "The Cybersecurity Skills Gap Won't Be Solved in a Classroom", Forbes, June 19, 2019

Do you need more reasons to choose a career in Cybersecurity?

Spread the word!

Job Opportunities – Some pointers

- **Cyber security Ventures predict** there will be **3.5 million unfilled cybersecurity positions by 2021**.
- https://cybersecurityventures.com/jobs/

- The National Association of Software and Services Companies (**NASSCOM**) recently estimated that **India alone will need 1 million cybersecurity professionals by 2020** to meet the demands of its rapidly growing economy.
- https://www.dqindia.com/the-curious-case-of-indias-cybersecurity-skills-gap-and-prevailing-opportunities/

- The need of an hour as there is a **shortage of over 1 million cybersecurity professionals** in the domain in the country today as per DSCI.
- https://www.financialexpress.com/industry/msme-other-skill-gap-in-cybersecurity-setting-up-forensic-university-to-help-businesses-tide-over-talent-shortage/1866686/

Job Opportunities – Some pointers

India Inc sees rise in talent gap in cybersecurity skills: Report
https://economictimes.indiatimes.com/tech/internet/india-inc-sees-rise-in-talent-gap-in-cybersecurity-skills-report/articleshow/63041883.cms

India needs 3 million cyber security professionals right now: IBM
https://www.business-standard.com/article/companies/india-needs-3-million-cyber-security-professionals-right-now-ibm-118051300153_1.html

Bengaluru accounts for the highest number (36%) of jobs in Cybersecurity sector in India: Indeed
http://bwpeople.businessworld.in/article/Bengaluru-accounts-for-the-highest-number-36-of-jobs-in-Cybersecurity-sector-in-India-Indeed-/26-05-2018-150284/

HOW BIG IS THE CYBERSECURITY SKILLS AND TALENT GAP IN THE INDUSTRY?
https://analyticsindiamag.com/how-bad-is-the-cybersecurity-talent-gap-in-the-industry/

Where are the jobs available?

Consulting Firms
- Big 4 Audit/Consulting Firms
- Pure Play Consulting Firms
- Certification Bodies
- Research & Analyst Firms

IT Sector
- IT Service Companies
- IT Product Companies
- IT Startups
- Security Product Companies

Entrepreneurs
- Freelancer
- Own Startup

Non-IT Sector
- BFSI
- Healthcare & Pharma
- Defense
- Retail
- Telecom, etc

50

glassdoor | Jobs | Company Reviews | Salaries | Interviews

information security

All Job Types | Posted Any Time | With...

Risk _ TPRM Non FSO, Senior_BMP
EY – Bengaluru
EY
4.1 ★
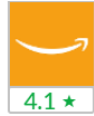
Cloud Support Engineer - SECURITY
Amazon – Bengaluru
4.1 ★

Product Security Engineer
VMware – Bengaluru
4.3 ★

Network Engineer 4
Capgemini – Bengaluru
3.3 ★

in | cyber security | Bengaluru Area, India | Search

Jobs ▾ | Date Posted ▾ | LinkedIn Features ▾ | Company ▾ | Experience Level ▾ | All filters

Showing 366 results   Sort by: Relevance   ☐ Classic View

☐ Internship (0)
☑ Entry level (70)
☐ Associate (103)
☐ Mid-Senior level (41)
☐ Director (3)
☐ Executive (2)

Cancel   Apply

CN-Strategy-TC-TA-Security- 07 Promoted
Accenture in India
Bengaluru, Karnataka, IN
Advanced knowledge of frameworks and standards including ISO 27001, ISO 27002, PCI DSS, years large scale security consulting experience and managing... www.accenture.com
2 connections work here
2 weeks ago

Technology Risk - Measurement - Tech Risk Engineering Developer
Goldman Sachs
Bangalore, IN
Skills And Experience We Are Looking For. At Goldman Sachs, you will have access to excellent training programs designed to improve multiple facets of your skills portfolio. ... careers-goldmansachs.icims.com
⏱ Be an early applicant
4 weeks ago

Technology Risk - Security Incident Response Team - Security Operations
Goldman Sachs
Bangalore, IN
Skills And Experience We Are Looking For. Experience conducting security analysis using a well-known commercially available SIEM (Security Information and Event Management) tool... careers-goldmansachs.icims.com
17 company alumni work here

20 days ago

Saved al...
Head Of
Worldwi...
Manage

Keywords for search: Cyber security, information security, information risk, security risk, privacy

51

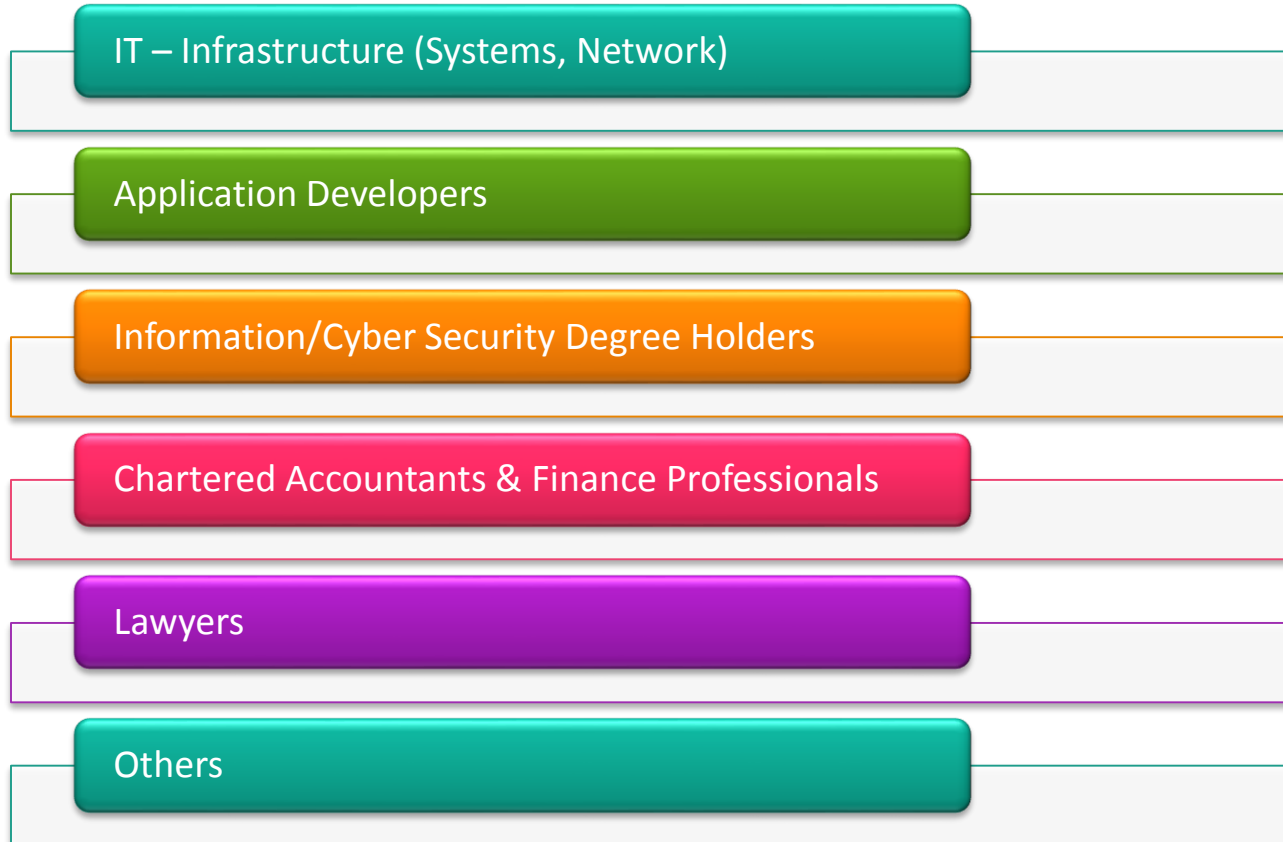# Information Security IndustryScape

Indian Cybersecurity Product Landscape Map[1]

Other Unconventional Cyber Security Careers

- Non-governmental organizations like the UN and its affiliates

- Government organizations (PSU, nationalized banks, govt departments, etc.)

- Global NGOs

- Cyber Security Writing – magazine, newsletters, blogs, news sites,

- Security events & conference organizer/presenter

- Cyber Security PR/Marketing

- Teaching/research positions with leading academic institutions

Where the talent comes from?

IT – Infrastructure (Systems, Network)

Application Developers

Information/Cyber Security Degree Holders

Chartered Accountants & Finance Professionals

Lawyers

Others

Career Roadmap

Keep Learning!
- Read | Practice | Write | Listen | Test
- Be willing to unlearn and re-learn
- Get mentored

Build Expertise
- Work on security projects
- Gain useful experience by delivering solid body of work
- Build track record for execution
- Gain cross-domain experience or exposure

Industry Outreach
- Attend Industry Security Conferences & Events to learn, network
- Join professional associations and stay active
- Start Volunteering on industry initiatives

Create an identity
- Share your expertise / knowledge
- Write – Blog / Articles in Journals / Online Magazines / Publish Papers or Books
- Network – Get to know who's who of the industry

Leverage your Expertise / Identity
- Speak at industry conferences / in-house talks
- Be a guest faculty or trainer
- Volunteer to mentor young professionals
- Obtain recognition from the industry by applying for industry awards

Top Experts in Cyber Security to follow

IFSEC Global influencers 2018: Cybersecurity
- https://www.ifsecglobal.com/ifsec-global-influencers-2018-cybersecurity/

Cybersecurity – Our Top Thirty Influencers
- https://www.itchronicles.com/security/cybersecurity-top-thirty-influencers/

50 Information Security Influencers You Should Be Following
- https://digitalguardian.com/blog/top-50-infosec-influences-you-should-follow

Top 12 Cybersecurity Thought Leaders to Follow
- https://blog.marketingenvy.com/top-cybersecurity-thought-leaders-to-follow

Best Cyber Security Twitter Profiles to Follow 2018
- https://www.cyberdb.co/best-cyber-security-twitter-profiles-follow-2018/

Career Advice

- Cyber Security career is a **marathon, not a sprint** – Be prepared for a long haul

- You've to be open-minded and to stay relevant you should be **willing to learn & unlearn**

- Have fun with the work and **don't try to learn everything all at once**

- Education is important but **real-world experience is essential**

- **Specialization is good for a start** but you need to pick up skills in other domains to become a well-rounded security professional

"If someone offers you an amazing opportunity and you're not sure you can do it, say yes - then learn how to do it later."

- Richard Branson
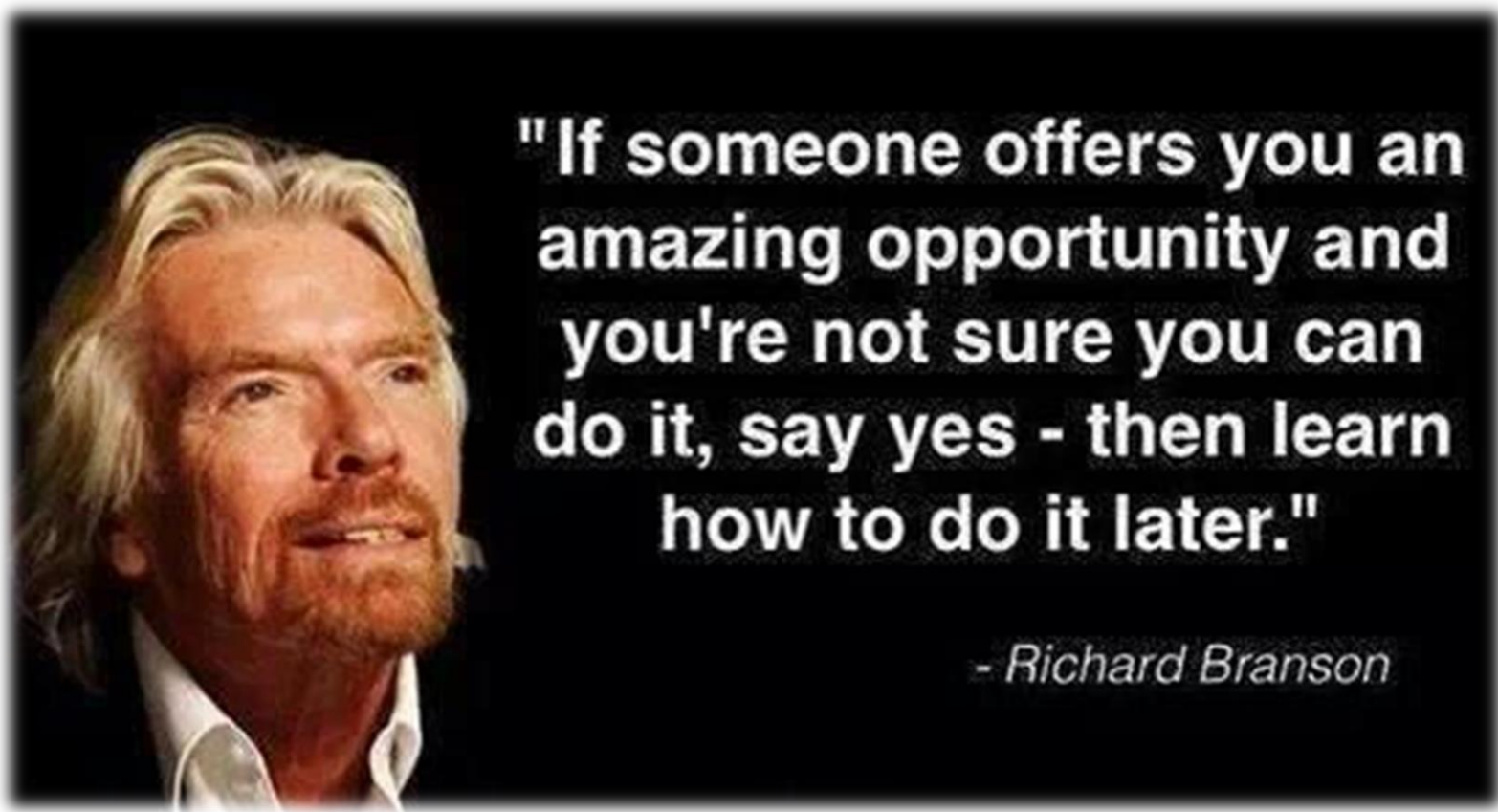
Scoring a Perfect 10: Aligning of Key Factors for that Dream Job!

1. Job Role
2. Job Title
3. Pay
4. Perks & Benefits
5. Job Base Location
6. Daily Commute
7. Industry Sector
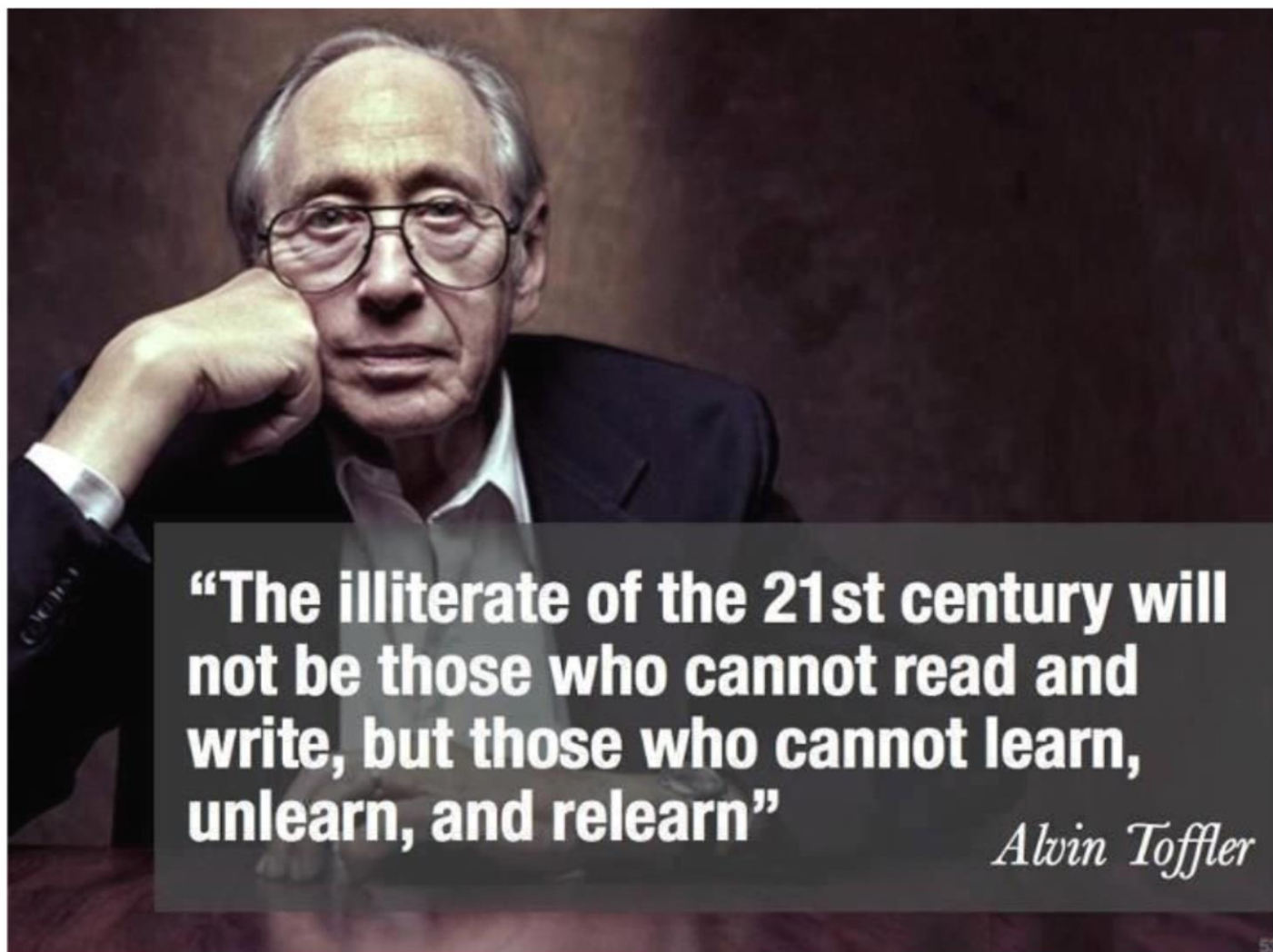8. Career Growth Prospects
9. Job Environment
10. Boss

Choose a boss, not a job. A boss that supports you, trusts you and believes in you will make a great difference in your career.

Oleg Vishnepolsky
Global CTO at DailyMail Online and Metro.Co.Uk

"The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn"

Alvin Toffler

THE **PERSON** YOU WILL BE IN **FIVE YEARS** DEPENDS LARGELY ON THE **INFORMATION** YOU **CONSUME TODAY**

- The books you read

- The accounts you follow

- The food you eat

- The people you spend time with

- The news you're exposed to

- The conversations you engage in

- The people you listen to

For further reading

Building a career in Information Security
- https://www.linkedin.com/pulse/build-your-career-information-security-benild-joseph/?_sm_au_=iHV5RRJPTtRP6kHF

Subjects that Help Building Cyber Security Skills while you are Studying
- http://www.nipunjaswal.com/2018/08/subjects-that-help-building-cyber-security-skills.html

Getting started with a career in Cyber Security and Information Security
- http://www.drchaos.com/getting-started-with-a-career-in-cyber-security-and-information-security/

Report: The top 8 emerging technology domains, and their threats
- https://sdtimes.com/ai/report-top-8-emerging-technology-domains-threats/

Level Up Your InfoSec Career Part 1
- https://www.peerlyst.com/posts/level-up-your-infosec-career-part-1-j-geno

Go, take on the world!