Beyond the Hacker Stereotype

Exploring Cybersecurity Careers You Didn't Know Existed

Brian Myers PhD, CISSP, CCSK

Experience

- 20 years in software development
- 9 years in information security

Past Positions

- InfoSec Director, WebMD Health Services
- Senior AppSec Architect, WorkBoard
- Senior Risk Advisor, Leviathan Security

Current Work

- Independent Information Security Consultant
- Co-organizer, OWASP AppSec Days PNW

English Major

English PhD

Technical Writer

Program Manager

Software Developer

Software Architect

Program Manager

Product Manager

VP of Product Dev

Manager, Software Dev

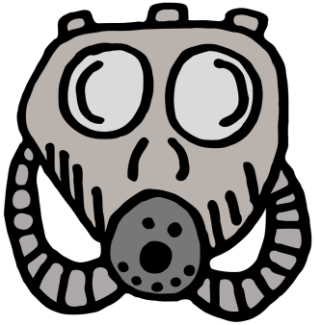
Director, Software Dev

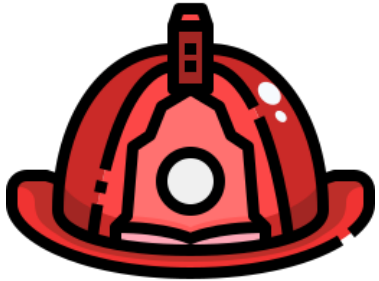
Security Architect

Director, Information Security

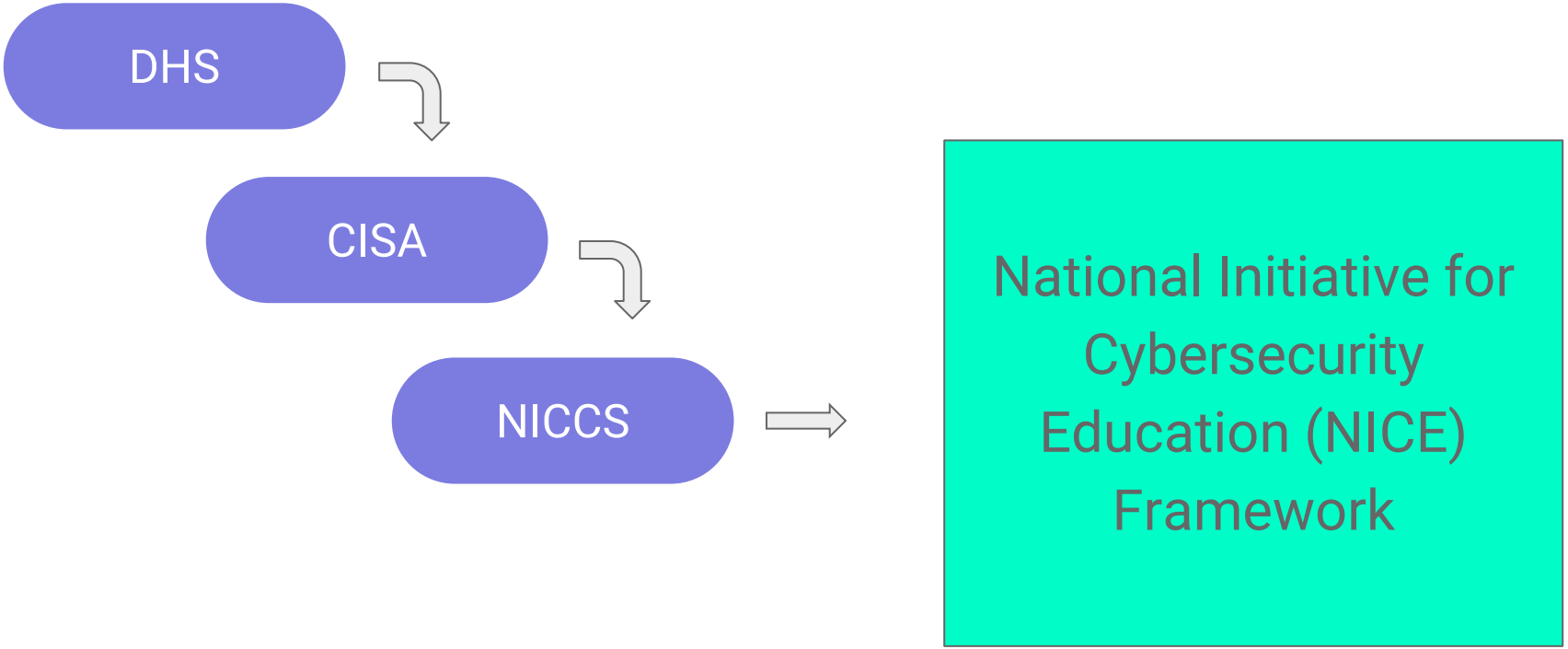
Application Security Architect

Security Consultant





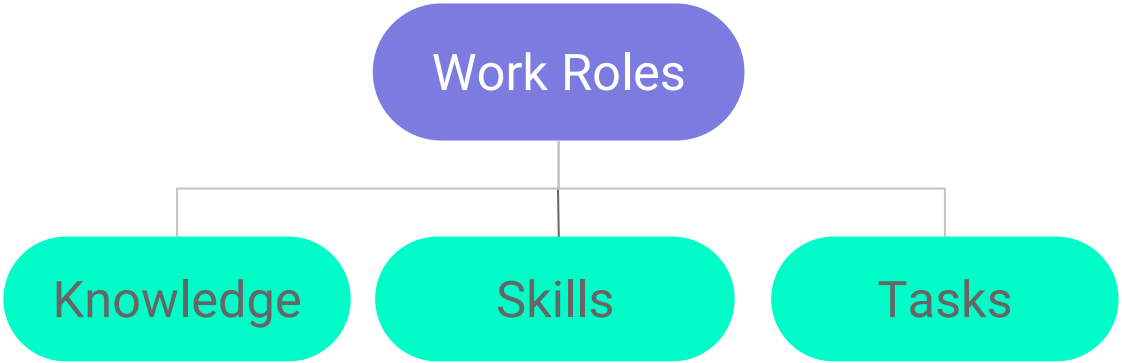
Introducing the NICE Framework



Work Role Categories

Oversight and Governance	Leadership, management, advocacy
Design and Development	Research, design, develop, test
Implementation and Operation	Configure, operate, maintain
Protection and Defense	Identify, analyze, and mitigate risks
Investigation	Investigate attacks and crimes
Cyberspace Intelligence	Collect, analyze, disseminate threat info
Cyberspace Effects	Plan and execute cyber operations

NICE FRAMEWORK



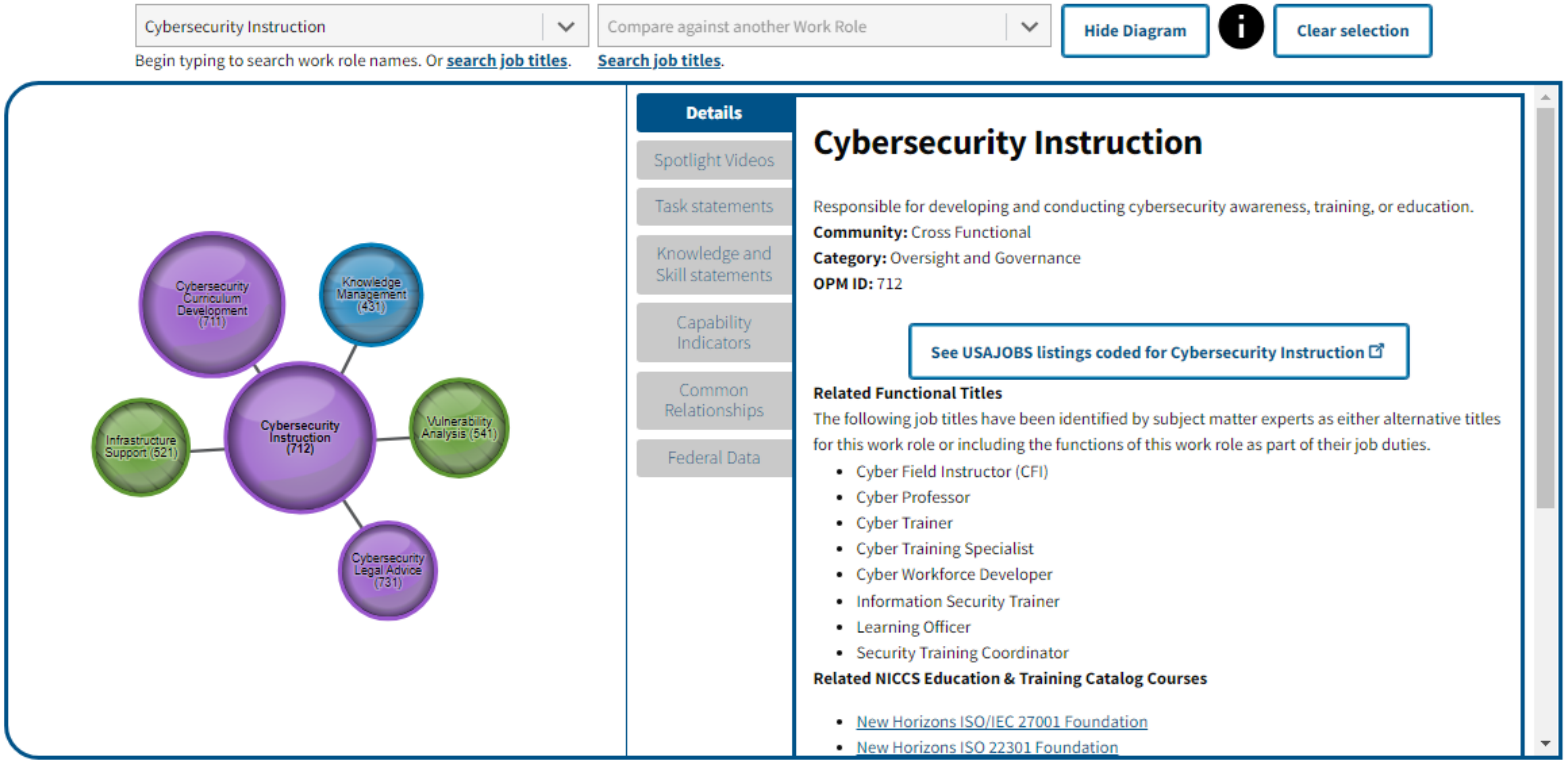
Skills: communicating

Skill ID	Skill Name
S0077	Skill in securing network communications
S0182	Skill in analyzing target communications internals and externals collected from wireless LANs
S0252	Skill in processing collected data for follow-on analysis
S0283	Skill in transcribing target language communications
S0385	Skill in communicating complex concepts
S0386	Skill in communicating verbally
S0387	Skill in communicating in writing
S0483	Skill in identifying software communications vulnerabilities
S0533	Skill in developing target communication profiles
S0537	Skill in designing wireless communications systems
S0596	Skill in encrypting network communications
S0610	Skill in communicating effectively
S0716	Skill in identifying target communications networks
S0824	Skill in communicating with customers
S0825	Skill in communicating with engineering staff
S0826	Skill in communicating with external organizations
S0827	Skill in communicating with internal and external stakeholders
S0888	Skill in performing target communications analysis

Roles With S0385 and S0387

Work Role	Skill
Cybersecurity Instruction (OG-WRL-005): Responsible for developing and conducting cybersecurity awareness, training, or education.	S0097, S0156, S0379, S0380, S0381, S0385, S0386, S0387, S0388, S0389, S0390, S0391, S0392, S0393, S0394, S0395, S0424, S0430, S0431, S0467, S0468, S0472, S0473, S0483, S0530, S0543, S0544, S0572, S0591, S0592, S0597, S0600, S0601, S0602, S0610, S0612, S0613, S0618, S0628, S0629,
Security Control Assessment (OG-WRL-012): Responsible for conducting independent comprehensive assessments of management, operational, and technical security controls and control enhancements employed within or inherited by a system to determine their overall effectiveness.	S0015, S0097, S0111, S0136, S0141, S0172, S0175, S0177, S0248, S0252, S0385, S0386, S0387, S0388, S0389, S0391, S0393, S0394, S0401, S0402, S0403, S0409, S0414, S0415, S0416, S0423, S0430, S0431, S0435, S0436, S0437, S0438, S0439, S0440, S0441, S0443, S0447, S0462, S0463, S0465, S0466, S0472, S0473, S0483, S0503, S0504, S0506, S0511, S0515, S0532, S0543, S0544, S0558, S0559, S0574, S0578,
Cybersecurity Architecture (DD-WRL-001): Responsible for ensuring that security requirements are adequately addressed in all aspects of enterprise architecture, including reference models, segment and solution architectures, and the resulting systems that protect and support organizational mission and business processes.	S0141, S0172, S0383, S0385, S0386, S0387, S0418, S0419, S0428, S0429, S0430, S0458, S0465, S0466, S0543, S0544, S0551, S0569, S0570, S0571, S0574, S0578, S0590, S0596, S0598, S0613, S0632, S0637, S0638, S0655, S0657, S0658, S0659, S0673, S0674, S0675, S0683, S0685, S0686, S0728, S0762, S0791, S0813, S0814, S0822, S0853, S0880, S0893

Career Pathways Tool



Cybersecurity Instruction

Related Functional Titles

The following job titles have been identified by subject matter experts as either alternative titles for this work role or including the functions of this work role as part of their job duties.

- Cyber Field Instructor (CFI)
- Cyber Professor
- Cyber Trainer
- Cyber Training Specialist
- Cyber Workforce Developer
- Information Security Trainer
- Learning Officer
- Security Training Coordinator

Legend

C - Core Task A - Additional Task

A* - Not included in the initial analysis to determine whether it is Core or Additional to the work role.

C	**T0101**	Evaluate the effectiveness and comprehensiveness of existing training programs
A	**T1008**	Prepare and deliver education and awareness briefings
A	**T1009**	Create a cybersecurity awareness program
C	**T1020**	Determine the operational and safety impacts of cybersecurity lapses

Related Roles by TKS

On Ramps

Off Ramps

The following work roles are related by their shared task, knowledge, and skill statements.

711-Cybersecurity Curriculum Development	87.38%
431-Knowledge Management	40.98%
541-Vulnerability Analysis	36.73%
731-Cybersecurity Legal Advice	36.07%

Capability Indicators

	Entry	Intermediate	Advanced
Education	Associate's, Bachelor's	Bachelor's	Bachelor's, Master's, Ph.D.
Training	Talent Development, Human Resources, Technical	IT, Cyber, Instructional Design, Vendor, LMS	Instructional Design, Learning Styles, IT
Credentials / Certifications	Not recommended	Beneficial, not essential	Recommended

Role: Cybersecurity Instruction

Jamal Mercer (He/Him) · 3rd

Engagement Coordinator and Speaker at Microsoft's Cybercrime Center

Role: Cybersecurity Legal Advice

TASKS
Evaluate regulatory compliance
Align policies with regulatory requirements
Determine the impact of security lapses
Evaluate regulatory changes

SKILLS
Evaluate laws
Evaluate policies
Assess risks
Communicate well

KNOWLEDGE
Security and privacy laws
Risk management process
Supply chain risks
Federal agency roles
Cyber principles and practices

Role: Cybersecurity Legal Advice

- Attorney-Adviser
- Contract Attorney
- Foreign Law Specialist
- General Attorney

- Attorney-Adviser
- Contract Attorney
- Foreign Law Specialist
- General Attorney

Molly Buckley

LEGAL FELLOW

Molly Buckley is a Legal Fellow on EFF's civil liberties team, where she works on free speech, privacy, censorship, and surveillance issues.

Role: Cybersecurity Legal Advice

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

Role: Knowledge Management

TASKS
Manage knowledge repositories
Create knowledge assets
Make knowledge access paths
Protect access to assets
Monitor usage of assets

SKILLS
Conduct searches
Conduct research
Administer databases
Perform technical writing

KNOWLEDGE
Knowledge management tools
Collaboration tools
Taxonomy of models and frameworks
Security principles and practices
IR principles and practices

Role: Knowledge Management

- Business Analyst
- Business Intelligence Analyst/Manager
- Business and Requirements Analyst
- Content Manager
- Data Custodian
- Data Storage Specialist
- Information Manager
- Information Owner/Steward
- Records and Information Management Specialist

Role: Knowledge Management

DEGREE REQUIRED?

No

But Bachelor's Degree is recommended

Certifications encouraged

MEDIAN SALARY

$75,000

JOB GROWTH

11%

SOFT SKILLS

Multitasking

Leadership

Big-picture vision

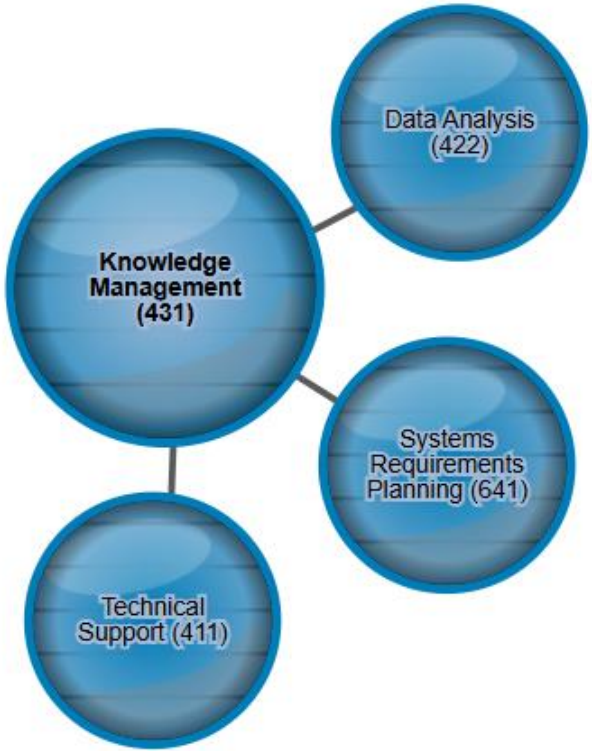
Responsible

COMMON JOB DUTIES

- Help organizations to identify, document, and access intellectual assets like employee expertise, best practices, and organizational knowledge
- Perform information searches, knowledge mapping, and knowledge management
- Knowledge of laws, regulations, policies, and ethics as they relate to cybersecurity and privacy
- Ensuring compliance with Payment Card Industry and Personal Health Information data security standards
- Design, build, implement, and maintain a knowledge management framework that provides end-users access to the organization's intellectual capital
- Promote knowledge sharing between information owners/users through an organization's operational processes and systems
- Lead efforts to promote the organization's use of knowledge management and information sharing

⭐ Bonus Feature: On Ramps ⭐

On Ramps



Role: Threat Analysis

TASKS
Monitor websites for hostile content
Identify threat tactics
Coordinate collection activities
Prepare threat briefings
Assess effectiveness of intelligence

SKILLS
Conducting deep web research
Collaborating with others
Analyzing large data sets
Mimicking threat actors
Establishing priorities

KNOWLEDGE
Cognitive biases
Security threats
Network principles
Web security principles
Intelligence fusion

Role: Threat Analysis

- Threat Analyst
- Cyber Intelligence Analyst
- Security Analyst
- Incident Response Analyst

Role: Threat Analysis

DEGREE REQUIRED?

Yes

Bachelor's in Cybersecurity IT, or Computer Science

Certifications Encouraged

MEDIAN SALARY

$119,000

JOB GROWTH

30%

SOFT SKILLS

Collaborative

Ability to Work Well Under Pressure

Analytical

COMMON JOB DUTIES

- Provide subject matter expertise to the development of cyber operations-specific indicators
- Monitor open source websites for hostile content directed towards organizational or partner interests
- Collaborate with intelligence analysts and targeting organizations involved in related areas
- Conduct in-depth research and analysis
- Use gathered intelligence to counter incoming threats and prevent potential threats
- Provide current intelligence support to critical internal/external stakeholders as appropriate
- Identify threat tactics and methodologies
- Provide evaluation and feedback necessary for improving intelligence production, intelligence reporting, collection requirements, and operations

Role: Cybercrime Investigation

TASKS
Process crime scenes
Interview witnesses
Analyze network attacks
Process digital evidence
Assess behavior of suspects during investigations
Prepare reports

SKILLS
Navigate the dark web
Examine digital media
Collect digital evidence
Assess supply chain risk
Solve problems
Analyze behavior
Analyze threats

KNOWLEDGE
Cyber laws and regulations
Security principles and practices
Authentication techniques
Intrusion detection tools
Adversarial techniques
Abnormal behavior

Role: Cybercrime Investigation

- Computer Crime Investigator
- Cyber Incident Handler / Responder
- Special Agent

Marqwuese Bayne · 3rd
Sr. U.S. Probation Officer at U.S. Probation Office: Cybercrime Specialist

Role: Cybercrime Investigation

DEGREE REQUIRED?

NO

Certification(s) encouraged
but not essential
Experience can supplement

MEDIAN SALARY

+$67,000

JOB GROWTH

10%

SOFT SKILLS

Curiosity & Persistence
Strong Communication
Information Use
Critical Thinking

COMMON JOB DUTIES

- Find and navigate the dark web
- Process crime scenes
- Conduct interviews of victims, witnesses, and/or suspects
- Examine recovered data for information
- Fuse computer network attack analyses with criminal and counterintelligence investigations and operations
- Determine whether a security incident is indicative of a violation of law that requires specific legal action
- Identify elements of proof of the crime
- Identify, collect, and seize documentary or physical evidence, to include digital media and logs associated with cyber intrusion incidents, investigations, and operations
- Provide criminal investigative support to trial counsel during the judicial process
- Prepare reports to document the investigation

⭐ Bonus Feature: Job Listings ⭐

See USAJOBS listings coded for Cybercrime Investigation

Criminal Investigator

Office of Inspector General
Department of Education
Multiple Locations

Starting at $105,029 Per Year (GS 13)
Permanent • Full-time

Open 10/21/2024 to 11/04/2024

Role: Multi-disciplined Language Analysis

TASKS
Transcribe language materials
Advise on cultural issues
Develop intel collection strategies
Identify technologies used by target
Identify foreign language terms in software code

SKILLS
Transcribe communications
Identify customer needs
Assess threat actors
Perform OSINT research
Analyze social networks
Interpret traceroute results

KNOWLEDGE
Languages & dialects
Linguistic analysis
Analytical tools and techniques
Network communications principles
Laws and regulations
Digital communications systems

Role: Multi-disciplined Language Analysis

- Language Intelligence Analyst
- Foreign Language Analyst
- Linguistic Analyst
- Content Analyst

Ernest Song · 3rd

Cyber Threat Intelligence Analyst / Linguist

Role: Multi-disciplined Language Analysis

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 inital 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

Role: Exploitation Analysis

- Vulnerability Analyst
- Penetration Tester
- Security Researcher
- Security Engineer
- Offensive Security Engineer
- Red Team Operator

- **Vigilante Hacker by Night**

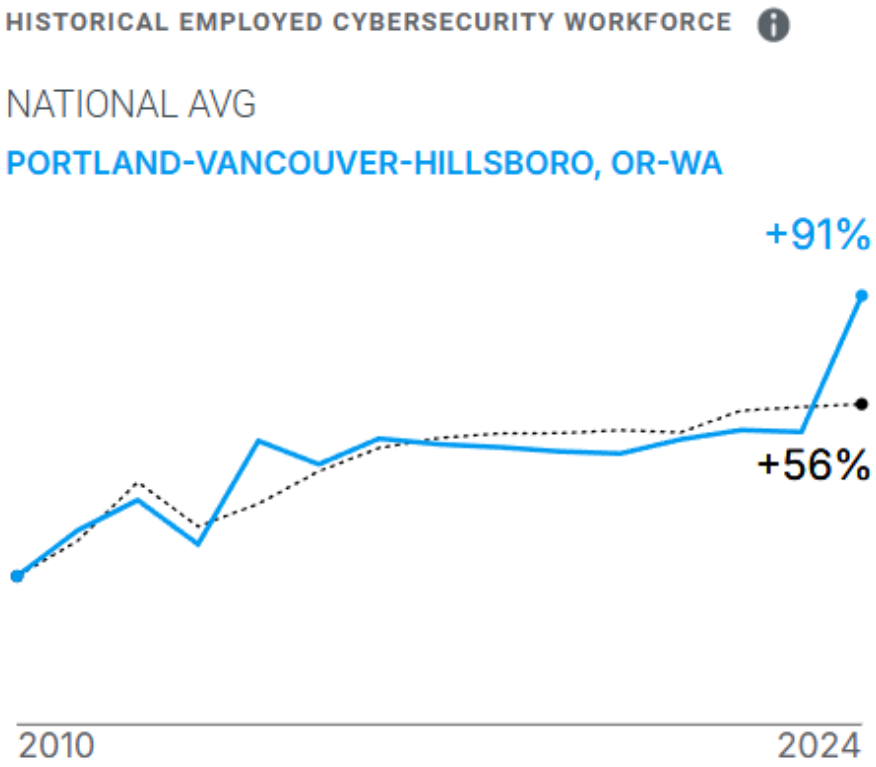
Elliot Alderson

Cyber Security Engineer at AllSafe

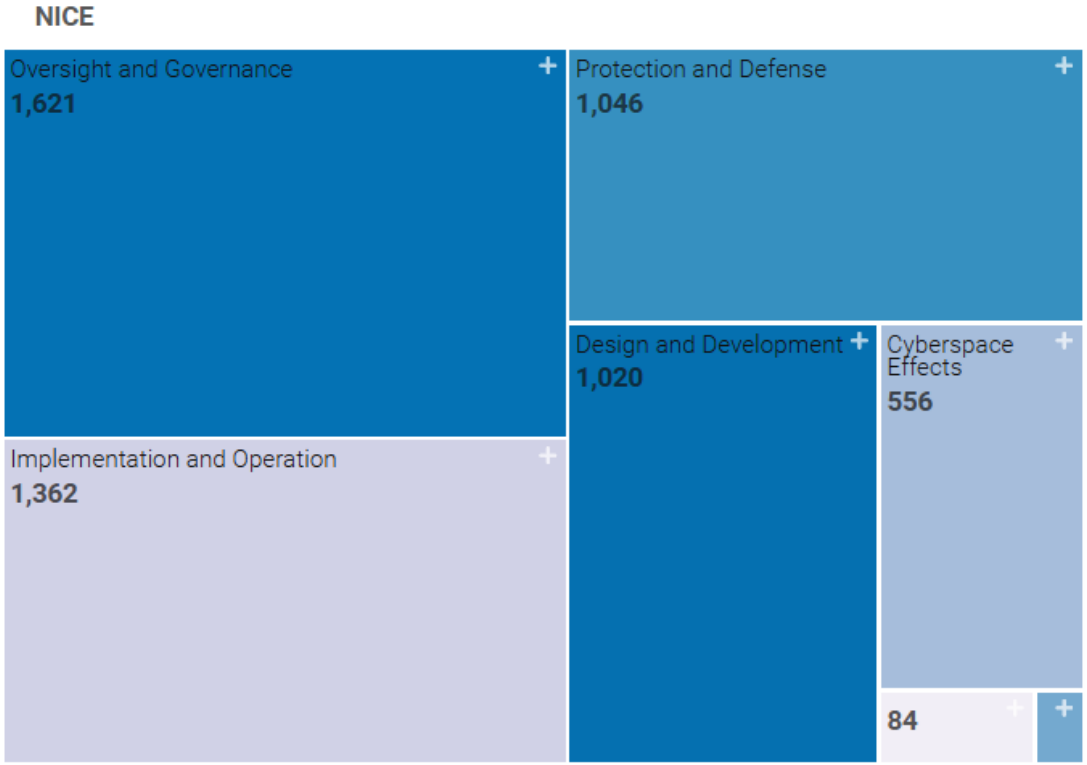
Review

- NICE Framework (from NICCS)
- Cybersecurity Instruction
- Cybersecurity Legal Advice
- Knowledge Management
- Threat Analysis
- Cybercrime Investigation
- Multi-disciplined Language Analysis

CYBERSEEK.ORG



CYBERSEEK.ORG



Our country needs individuals with cybersecurity skills at all levels of every organization, in all industries, from finance and healthcare to entertainment.

Resources

niccs.cisa.gov
Info on security careers, education, and training

cyberseek.org
Detailed data about security job market supply and demand

nwcyber.org *(coming soon)*
We inform, connect, and guide people to opportunities

Questions?

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