



APPRENTICESHIPS FOR THE MODERN ECONOMY

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NORTHROP GRUMMAN

Tech talent shortage shows up in job mismatches

BRIEF

The skills gap grew by 12% last year, survey says

The tech talent shortage is real

Businesses want a very particular set of skills.

NORTHERN VIRGINIA COMMUNITY COLLEGE (NOVA)

Largest
higher
education
institution in
Virginia

2nd Largest
community
colleges in
the United
States

120+
degree
programs

84,000+
total
students

15%
military
and
veterans

40+
transfer
agreements

CHANGING HOW NOVA OPERATES



REGIONAL ECONOMIC OUTLOOK

#1 region - *Cybersecurity job postings in the U.S.*

#2 region - *Information Technology job postings in the U.S.*

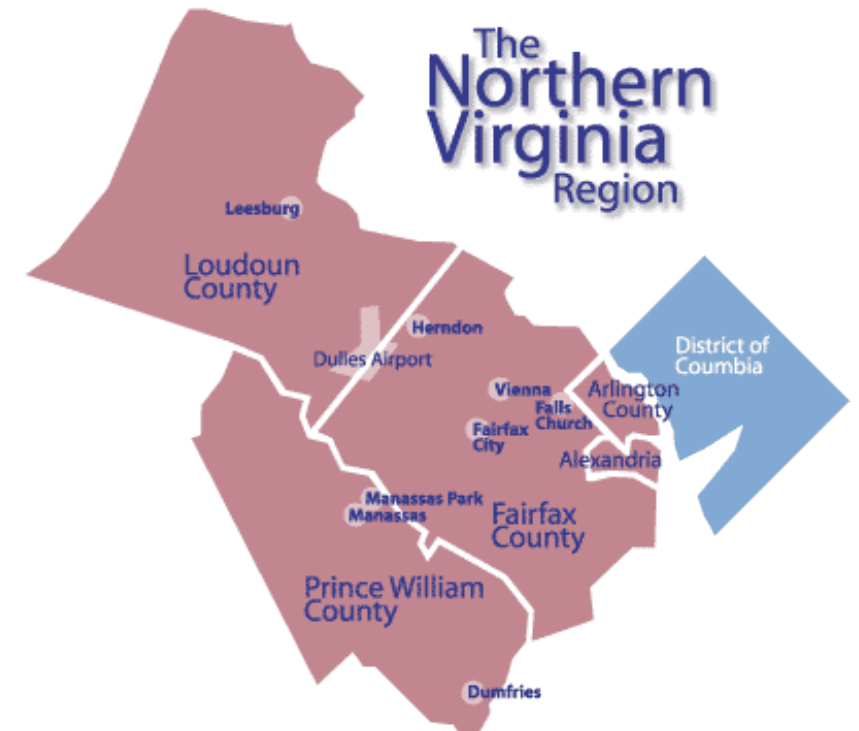
10% - *NOVA workforce employed in Information Technology*

130,190 - *Total IT jobs in the NOVA region as of Q4 2018*

113,505 - *Job postings in the NOVA region over the last 12 months*

1.8% - *IT unemployment rate*

#1 requested credential - *Security clearance*



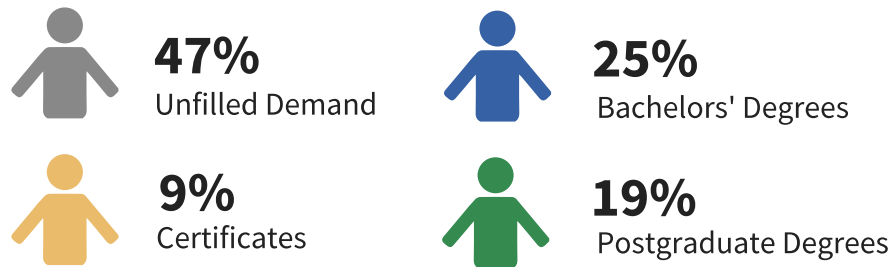


CREATING SUPPLY



TOO FEW STUDENTS CHOOSE HIGH DEMAND FIELDS OF STUDY

Annual Information Technology degrees awarded in Washington, D.C. Metro area versus annual job demand





TechPathways

 **TECH
PATHWAYS**

Right Brain. Left Brain. Tech Brain.



Data Science

Data Science is a cutting-edge field where algorithms meet problem solving. It's where information is gathered and then harnessed to deliver informed insights to business challenges and opportunities. It's also applied to solve some of the world's biggest challenges – from climate change to curing cancer.



Programming

Programming is one of the most in-demand jobs in tech. That's because from cars to banks to manufacturing, today's world runs on code. If you're all about problem solving, can't get enough of languages and love finding ways to automate tasks, programming might just be your thing.



Cybersecurity

Cybersecurity keeps the bad guys from infiltrating our digital lives and fortifies the world against hacking attacks, identity theft and worse. If you have a keen eye for gaps and mistakes, love the adrenaline rush of putting out fires and want to help future-proof our existence, cybersecurity may be for you.

} TECH
PATHWAYS

Think a little more sideways.

it's by the people,
for the people.

tech.

See your future in tech.

Learn more at techpathways.com

DEFINING A NEW PATHWAY



**Internships/
Apprenticeships**



**Credit for Prior
Learning**



**ADVANCE
Program**

WHAT IS AN APPRENTICESHIP?



**Related
Technical
Instruction**



**On-The-Job
Training**



**Progressive
Wages**



**National
Occupational
Credential**

Unlike internships, apprenticeships are long-term relationships, typically 1-4 years

WHAT IS THE BUSINESS CASE?



**Specialty Skill
Development**



**Knowledge
Sharing**



**Improved
Retention**



**Expanded
Talent Pipeline**



**Branding
Opportunities**

APPRENTICESHIPS AT NOVA

Amazon Web Services: Veteran Technical Apprenticeship Program

- 200+ apprentices in a variety of cloud and infrastructure occupations
- Piloted virtual programs in Atlanta, Chicago, Dallas, and Seattle

New Apprenticeship Programs

- 400+ apprentices with 12+ companies to expand technical apprenticeship programs
- Partnership with NVTC
- Targeted outreach to military and veterans
- All programs tied to industry-recognized credentials



APPRENTICESHIP MODELS

Cloud Based, Cybersecurity, IT Support, Technical Roles

- Front loaded Model:

Related Technical Instruction → On the job training

- Integrated Model:

Related Technical Instruction → On the job training → Related technical instruction → On the job training



An innovative program for veterans, transitioning service members and military spouses in northern Virginia.

techapprenticeshipva.org

FINAL THOUGHTS: THE FUTURE TALENT PIPELINE



**Changing
Economy**



**Communicate the
value of new
pathways**



**Rethinking the
hiring process**