

Vulnerability Discovery for All: Experiences of Marginalization in Vulnerability Discovery

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DO YOU FEEL LIKE YOU BELONG WITHIN SECURITY?

The cybersecurity industry is short 3.4 million workers—that's good news for cyber wages

BY SYDNEY LAKE

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Female

Male

Minority

Why does this matter?

- Equity problem
 - Limited opportunities for lucrative careers
- “Given enough eyes, all bugs are shallow.”
 - Diverse perspectives needed to avoid blindspots
 - Homogenous community leads to similar perspectives



Research questions

- How do people from marginalized populations come to **participate** in vulnerability discovery?
- Do people from marginalized populations feel **accepted** and **supported**?
- What **challenges** do people from marginalized populations face?

Methods

- Conducted 16 semi-structured interviews
 - Self-described work and personal identity
 - Walk us through their career in vulnerability discovery
- Analyzed data using open coding

Research questions

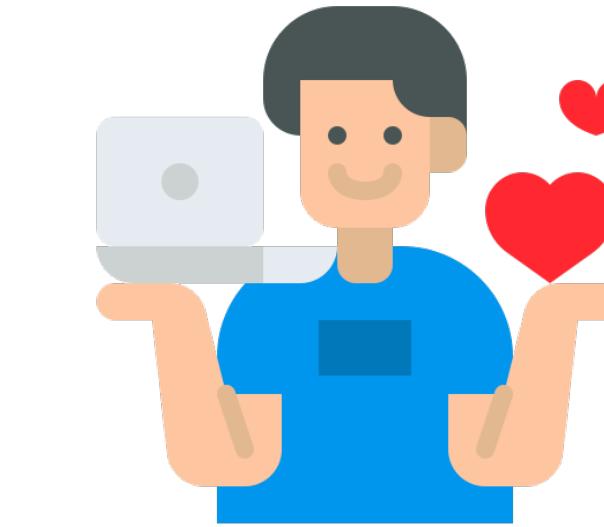
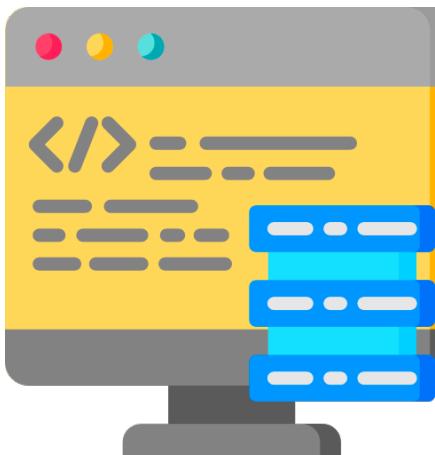
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Path to Vulnerability Discovery

- Others introduced them
- Tangential activities lead to vulnerability discovery
- Drawn to specific aspect

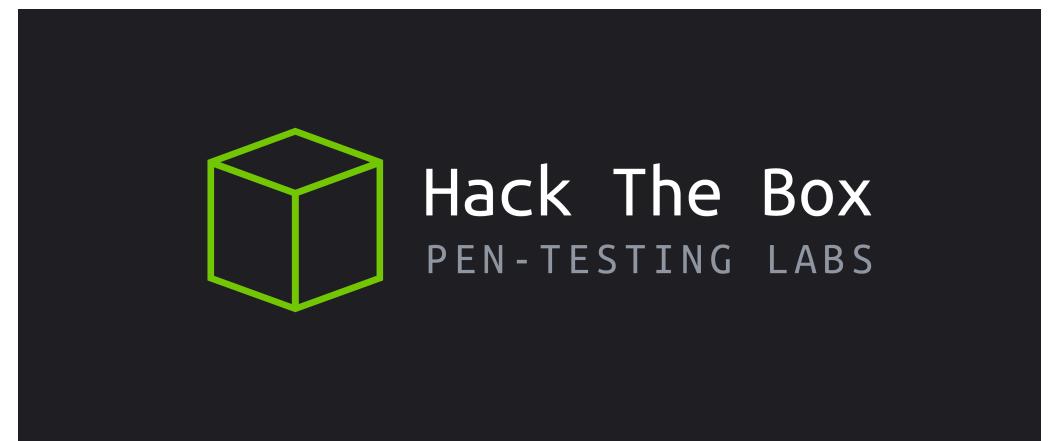
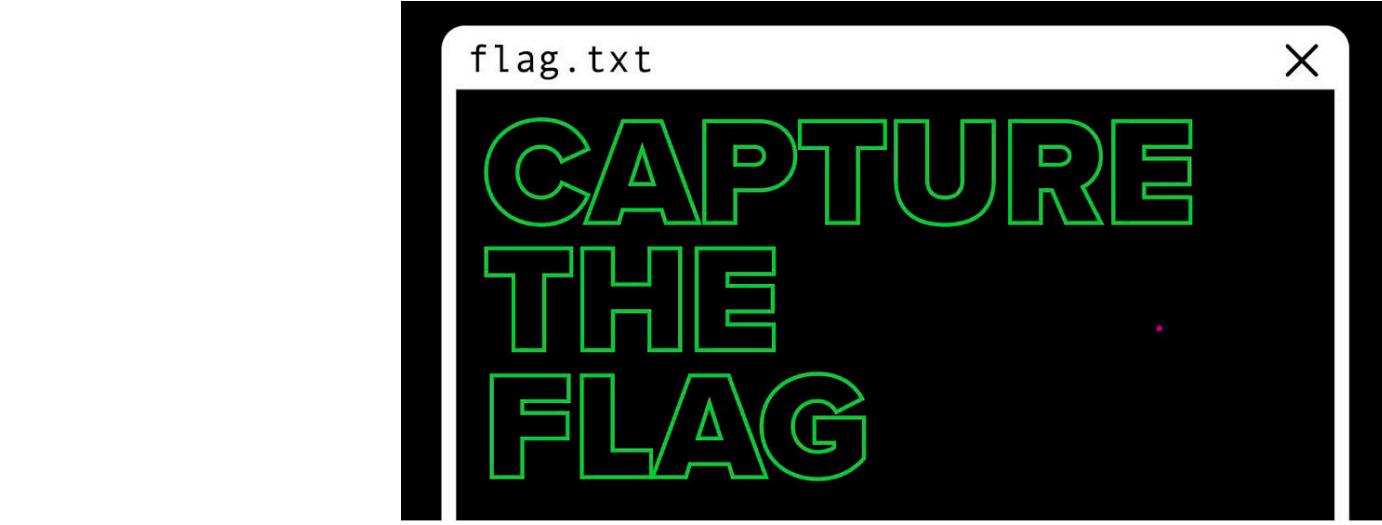


Learning Resources

- Resources with built-in structure
 - Hacking challenges, Certifications, Online courses
- Unstructured resources
 - On the job learning, YouTube videos, Hacking sites



YouTube



Images from: Flaticon, Fiverr, YouTube, HackThisSite, HackTheBox

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Mentoring

- Mentorship is a two-way relationship.
 - Mentors provide guidance, support, and resources.
 - Help mentees set goals and develop plans.
 - Connect mentees with relevant resources and opportunities.
 - Share relevant resources to help mentees learn and grow.
- *More than in other fields.
- Increase in **self-efficacy**, **activity**, and **expectations** after meeting first good **mentor**.
- development through mentors
- manageable/useful amount

Representation and diversity

- Perce... “I did **feel welcome**... because my class was
very **diverse**”
- Gener...

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Challenges

- Education
 - Materials lack clear structure
 - Materials assume technical background
- Competitive landscape
 - Lack of attainable entry positions
 - Outcome uncertainty

Community

- Difficulty being taken seriously
- Lack of support
- Unhelpful responses
 - “They’re just here to make trouble”
 - Other students being mean
- Discrimination

Compounds other than water

Hydrocarbons
Alcohols
Esters

“I could tell they weren’t taking me seriously...
they saw me and were like, ‘What’s she trying

to do here?’”

adult

Asia

Takeaways

- Mentors were essential
- Help mentees reach willing mentors
 - Mentor/mentee matching programs
 - Open office hours
 - Anonymous mentoring

Questions:
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