

Digital Forensic Certification  
Training for the Department of  
Homeland Security and State &  
Local Law Enforcement  
(FLETC)

Yetunde Oloko and Hannah Fell  
Mentor: Dr. Christie Nelson

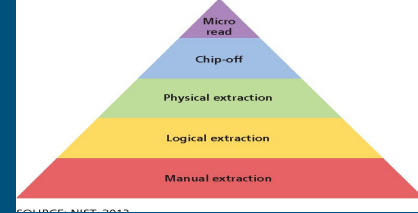
# About Us

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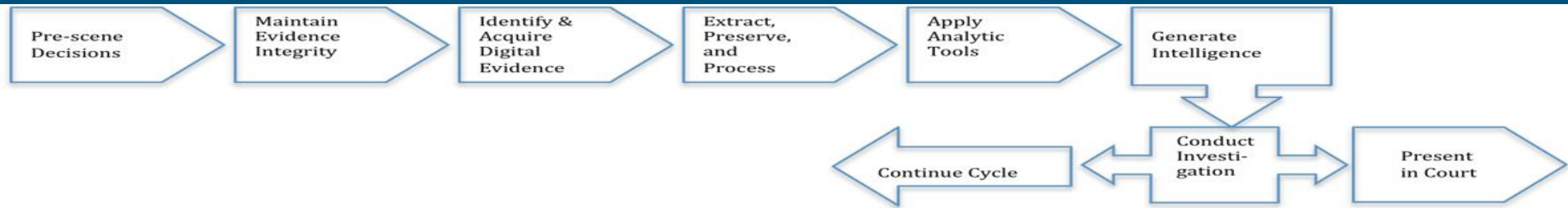
- **Hannah Fell** Math major, Westminster College: I will be using data science to analyze qualitative and quantitative data collected throughout our research while learning more about cyber security and digital forensics as a whole.
- **Yetunde Oloko** National/Cyber Security major, NJCU: I will be using my cyber security skills to assess current digital forensics certifications, identify equivalency classes as well as gaps in available training for law enforcement officers and judges.



# Digital Forensics



- **What is it:** Branch of forensic science focused on recovery and investigation of artifacts found on digital devices [1].
- **Examples:** pulling evidence from cell phone data, instagram accounts, a large international company's server system, cloud storage systems
- **Takeaways:** Constant training for patrol officers, prosecutors, and judges is required to promote a better collection of digital evidence [2].

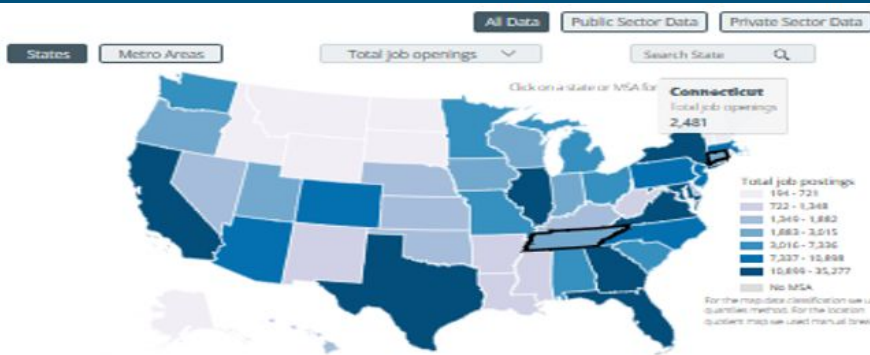


# Skill and Employment Demand Data

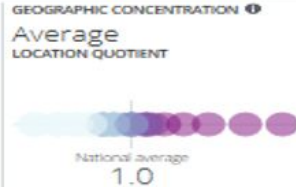
## Cybersecurity Supply/Demand Heat Map

Cybersecurity talent gaps exist across the country. Closing these gaps requires detailed knowledge of the cybersecurity workforce in your region. This interactive heat map provides a granular snapshot of demand and supply data for cybersecurity jobs at the state and metro area levels, and can be used to grasp the challenges and opportunities facing your local cybersecurity workforce.

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## National level



- TOP CYBERSECURITY JOB TITLES
- Cyber Security Engineer
  - Cyber Security Analyst
  - Network Engineer / Architect
  - Cyber Security Manager / Administrator
  - Systems Engineer
  - Software Developer / Engineer
  - Vulnerability Analyst / Penetration Tester
  - Systems Administrator
  - IT Auditor



Note: The Investigate category usually has fewer openings than other categories and may not be visible in the chart. To view data for the Investigate category, please hover over the thin line in the bottom right of the visualization.



## DIMACS REU

## Project Background

## MBS Externship Exchange Program

Homeland Security works to improve the security of the U.S. by monitoring customs and immigration enforcement, responding to natural and manmade disasters, and doing antiterrorism work and cyber security [5].

This is a project through the Criminal Investigations Network Analysis (CINA) Center of Excellence at George Mason University.

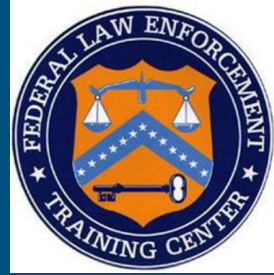
Our project is a part of the funded Department of Homeland Security project, "Best Practices for Sharing Digital Evidence."

The Federal Law Enforcement Training Center (FLETC) is our partner agency.

FLETC is one of the nation's largest providers of law enforcement training [6].

# Introduction to Problem

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- **Difficulties:** Digital forensics is a rapidly changing field and is relatively new in the criminal justice system. It can be difficult for investigators to manipulate and store digital evidence. Furthermore, state and local law enforcement are sometimes short of funds.

## Overall CINA Project

- Analyze training and certification requirements for digital forensics for Homeland Security investigative units and State and Local Law Enforcement.
- Work with FLETC to identify opportunities and gaps in digital forensics training.
- Recommend digital forensics training and certification pathways to standardize training and certification across all of Homeland Security.

# Our Digital Forensics Project Goals

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1. Assess current digital forensics certifications
2. Identify “equivalency classes” (groupings) of certifications (by content, type, and other attributes)
3. Identify gaps and opportunities available for training of law enforcement officers and judges
4. Use data science to analyze qualitative and quantitative data:
  - Subject matter of expert interview reports
  - Qualitative input from technical experts, project partners, researchers
  - Ongoing database of available certifications/classes
  - Employment/labor hiring raw data
  - Practitioner survey data
5. Interpret and perform data analysis, continually gathering more data as needed
6. Gather insights and present findings to practitioners
7. Present at professional venue, to practitioners, and make a national impact on training

# Acknowledgements

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DIMACS REU ([reu.dimacs.rutgers.edu](http://reu.dimacs.rutgers.edu))

CCICADA ([ccicada.org](http://ccicada.org))

CINA project team

FLETC ([fletc.gov](http://fletc.gov))

MBS Externship Exchange program ([mbs.rutgers.edu/externshipsh](http://mbs.rutgers.edu/externshipsh))



# References

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- [1] Law Technology Today. (2018, May 29). The what, why, and how of digital forensics. Retrieved May 31, 2019, from <https://www.lawtechnologytoday.org/2018/05/digital-forensics/>
- [2] Goodison, S. E., Davis, R. C., and Jackson, B. A. (n.d.). Digital evidence and the U.S criminal justice system. Retrieved May 31, 2019.
- [3] Egan, D., Roberts, F. and project team (2019). *Best practices for digital evidence sharing*. Presented at CINA annual meeting 2019.
- [4] Cybersecurity Supply And Demand Heat Map. (n.d.). Retrieved May 30, 2019, from <https://www.cyberseek.org/heatmap.html>
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- [6] Llc, L. (2018, December 27). What is digital forensics? Retrieved May 31, 2019, from <https://lifars.com/2018/12/what-digital-forensics/>
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