

Lorenzo C. Neil

Research Staff Member - Science, Systems, and Sustainment Division - Institute for Defense Analyses

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Citizenship: USA

SUMMARY

Research Staff Member performing operational testing and analysis of cybersecurity software. PhD graduate with 6 years of research experience in usable security and developer secret management practices.

EDUCATION

North Carolina State University, Raleigh NC

Ph.D. (Doctor of Philosophy) in Computer Science, **GPA: 3.67/4.00**

Graduation Date: Spring 2025

NC State LSAMP Bridge to Doctorate Fellowship

Graduate Fellowship for Stem Diversity

Relevant Coursework: Computer and Network Security, Advanced Network Security, Human-Computer Interaction

University of Maryland, Baltimore County, Baltimore MD

Bachelor of Science in Computer Science, GPA: 3.25/4.00

Graduation Date: Spring 2019

UMBC Meyerhoff Scholar

Relevant Coursework: Software Engineering, Statistics, Data Science, Privacy, Information Retrieval

RESEARCH EXPERIENCE

Institute for Defense Analyses (IDA)

Spring 2025 - Present

Research Staff Member, Science, Systems, and Sustainment Division (S3D)

730 E Glebe Road, Alexandria VA 22305

Supervisor: Dr. V. Bram Lillard

RIGOROUS RESEARCH AND ANALYSIS FOR GOVERNMENT SPONSORED PROJECTS

Spring 2025 - Present

- Performing qualitative and quantitative research to ensure the sustainment of government sponsored technologies, systems, and products.
- Writing and communicating analytical objective reports to government stakeholders.

National Institute of Standards and Technology (NIST)

Spring 2022 - Fall 2024

GMSE Fellowship Program (Remote)

100 Bureau Dr, Gaithersburg, MD

Supervisor: Dr. Julie Haney, (301) 975-6772, may be contacted

Hours: 10/week during academic year, 40/week during summer

Salary: Fellowship Stipend

INTERVIEWED NON-EXPERTS ABOUT CURRENT CYBERSECURITY DEFINITIONS

Summer 2023 - Fall 2024

- Interviewed 30 non-experts to identify non-expert understandings and perceptions towards published cybersecurity definitions.
- Developed interview questionnaire and protocol, as well as analyzing interview responses.

DEVELOPED SURVEY ON PERCEPTIONS OF VISUAL PHISHING CUES WITHIN PHISHING EMAILS

Summer 2023 - Fall 2024

- Developed survey protocol to investigate employee's perceptions on identifying different types of phishing cues.
- Designed survey questionnaires, as well as phishing email themes and cue placement.

ANALYZED ONLINE PUBLISHED CYBERSECURITY DEFINITIONS FOR NON-EXPERTS

Spring 2022 - Spring 2023

- Built corpus of cybersecurity definitions likely to be encountered by non-experts.
- Observed inconsistent definition components and overly-technical terminology for non-experts.

ANALYZED VISUAL PHISHING CUES WITHIN PHISHING EMAILS

Spring 2022 - Spring 2023

- Applied NIST Phish Scale (NPS) to identify the prevalence and frequency of visual phishing cues within 59 real-world phishing emails.

North Carolina State University (NCSU)

Graduate Research Assistant, Wolfpack Security and Privacy Research Lab (WSPR)

Advisor: Dr. Bradley Reaves, (919) 513-7835, may be contacted

Fall 2019 - Spring 2025

Raleigh, NC 27695

Salary: Graduate Stipend

IDENTIFIED CHALLENGES WITH USING SECRET MANAGEMENT TOOL DOCUMENTATION

Fall 2023 - Fall 2024

- Observed in-person developer experiences while using tool documentation to learn secret management tools.
- Developed research goals and protocols, as well as collecting and evaluating observational data.

INTERVIEWED AUTHORS TO UNDERSTAND HOW THEY PRODUCE SECURITY ADVICE

Fall 2021 - Spring 2023

- Interviewed authors of security advice to learn the full advice creation process, key decision making, and challenges for security advice content creation.
- Trained team researchers in analyzing interview transcripts.

IDENTIFIED CHALLENGES DEVELOPERS FACE WITH CHECKED-IN SECRETS

Spring 2022 - Fall 2022

- Applied qualitative analysis to investigate developer's questions and related solutions about checked-in secrets.
- Identified 27 challenges and 13 solutions for managing checked-in secrets in software artifacts.

CATEGORIZED BEST PRACTICES IN SECRET MANAGEMENT ADVICE FOR DEVELOPERS

Fall 2021 - Spring 2022

- Performed grey literature review of online advice related to developer secret management practices.
- Identified 24 practices grouped into six categories comprised of developer and organizational practices

INVESTIGATED WEB SERVICE ACCOUNT REMEDIATION ADVICE

Spring 2020 - Spring 2021

- Identified five key phases for online account compromise remediation.
- Trained team researchers to analyze the quality of account remediation advice from popular web services.

University of Maryland, Baltimore County (UMBC)

Undergraduate Student Researcher

Advisor: Dr. Anupam Joshi, (410) 455-2590, may be contacted

Fall 2015 - Spring 2019

1000 Hilltop Cir, Baltimore, MD 21250

MINED CYBER THREAT INTELLIGENCE ABOUT OPEN-SOURCE PROJECTS AND LIBRARIES

Summer 2018

- Mined threat intelligence about open-source systems from issue reports in GitHub public code repositories.
- Tracked library and project dependencies for installed software on a client machine.
- Represented all stored threat intelligence and software dependencies in a security knowledge graph.

PUBLICATIONS

Conference Publications (Peer Reviewed)

1. **Lorenzo Neil**, Charlotte Healy, and Julie Haney. 2025. "A five-year-old could understand it" versus "This is way too confusing": Exploring Non-expert Understandings and Perceptions of Cybersecurity Definitions. In Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems (CHI '25). Association for Computing Machinery, New York, NY, USA, Article 652, 1–19. (Acceptance rate: 24.9%)
<https://doi.org/10.1145/3706598.3713820>
2. **Lorenzo Neil**, Harshini Sri Ramulu, Yasemin Acar, and Bradley Reaves. 2023. "Who comes up with this stuff? interviewing authors to understand how they produce security advice." In *Proceedings of the Nineteenth USENIX Conference on Usable Privacy and Security (SOUPS '23)*. USENIX Association, USA, Article 16, 283–299. (Acceptance rate: 22%)
3. **Lorenzo Neil**, Julie Haney, Kerriane Buchanan, and Charlotte Healy. 2023, "Analyzing Cybersecurity Definitions for Non-experts." In *IFIP International Symposium on Human Aspects of Information Security & Assurance (HAISA '23)*. pp. 391-404. Cham: Springer Nature Switzerland, https://doi.org/10.1007/978-3-031-38530-8_31.

4. Setu Kumar Basak, **Lorenzo Neil**, Bradley Reaves, and Laurie Williams. 2023. "What Challenges Do Developers Face about Checked-in Secrets in Software Artifacts?" In *Proceedings of the 45th International Conference on Software Engineering (ICSE '23)*. IEEE Press, 1635–1647. (Acceptance rate: 26.6%)
<https://doi.org/10.1109/ICSE48619.2023.00141>
5. Seto Basak, **Lorenzo Neil**, Bradley Reaves and Laurie Williams, 2022, "What are the Practices for Secret Management in Software Artifacts?," In *Proceedings of the IEEE Secure Development Conference (SecDev '22)* IEEE Press, 69-76. <https://doi.org/10.1109/SecDev53368.2022.00026>
6. **Lorenzo Neil**, Elijah Bouma-Sims, Evan Lafontaine, Yasemin Acar, and Bradley Reaves. 2021. "Investigating web service account remediation advice." In *Proceedings of the Seventeenth USENIX Conference on Usable Privacy and Security (SOUPS '21)*. USENIX Association, USA, Article 19, 359–376. (Acceptance rate: 22%)
7. **Lorenzo Neil**, Sudip Mittal, and Anupam Joshi. 2018. "Mining Threat Intelligence about Open-Source Projects and Libraries from Code Repository Issues and Bug Reports." In *Proceedings of the IEEE International Conference on Intelligence and Security Informatics (ISI '18)*. IEEE Press, 7–12. <https://doi.org/10.1109/ISI.2018.8587375>

EXPERTISE AND SKILLS

Programming	C, C++, Python, PHP, HTML/CSS, JavaScript, R, LaTeX
Research Methods	Survey Design, Interview Design, Qualitative & Quantitative Analysis
Tools	Nvivo Coding, Microsoft Office, Qualtrics, MATLAB, MYSQL

HONORS & AWARDS

NIST Graduate Student Measurement Science and Engineering (GMSE) Fellowship Program	Summer 2022 - Fall 2024
Graduate Fellowship for Stem Diversity (GFSD) Recipient	Fall 2022 - Fall 2024
NC STATE Black Graduate Student Association (BGSA) Treasurer	Fall 2020 - Fall 2022
NC STATE Bridges To Doctorate Fellowship Scholar	Fall 2019 - Fall 2021
UMBC NSA Scholar	Fall 2015 – Spring 2019
UMBC Meyerhoff Scholar	Fall 2015 – Spring 2019