Lorenzo C. Neil

Doctoral Candidate - Department of Computer Science - North Carolina State University
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Citizenship: USA

SUMMARY

Doctoral Candidate with 5 years of research experience in usable security and developer secret management practices. Interested in lead research roles related to cybersecurity, software development, or user-centered research.

EDUCATION

North Carolina State University, Raleigh NC — Expected Graduation Date: Fall 2024
Ph.D. (Doctor of Philosophy) in Computer Science, **GPA: 3.67/4.00** — 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 — Graduation Date: Spring 2019
Bachelor of Science in Computer Science, **GPA: 3.25/4.00** — UMBC Meyerhoff Scholar

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

RESEARCH EXPERIENCE

National Institute of Standards and Technology (NIST) — **Spring 2022 - Present**
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**

INTERVIEWING NON-EXPERTS ABOUT CURRENT CYBERSECURITY DEFINITIONS — Summer 2023 - Present

- Interviewing 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.

DEVELOPING SURVEY ON PERCEPTIONS OF VISUAL PHISHING CUES WITHIN PHISHING EMAILS — Summer 2023 - Present

- Developing survey protocol to investigate employee's perceptions on identifying different types of phishing cues.
- Designing 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) **Fall 2019 - Present**
Graduate Research Assistant, Wolfpack Security and Privacy Research Lab (WSPR) **Raleigh, NC 27695**
Advisor: Dr. Bradley Reaves, (919) 513-7835, may be contacted **Salary: Graduate Stipend**

IDENTIFYING CHALLENGES WITH USING SECRET MANAGEMENT TOOL DOCUMENTATION Fall 2023 - Present

- Observing 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.

INTERVIEWING 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.

IDENTIFYING 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.

CATEGORIZING 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

INVESTIGATING 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) **Fall 2015 - Spring 2019**
Undergraduate Student Researcher **1000 Hilltop Cir, Baltimore, MD 21250**
Advisor: Dr. Anupam Joshi, (410) 455-2590, may be contacted

MINING 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**, 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%)
2. **Lorenzo Neil**, Julie Haney, Kerrianne Buchanan, and Charlotte Healy. 2023, “Analyzing Cybersecurity Definitions for Non-experts.” In I*FIP International Symposium on Human Aspects of Information Security & Assurance* (HAISA ‘23). pp. 391-404. Cham: Springer Nature Switzerland, https://doi 10.1007/978-3-031-38530-8_31.
3. 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

4. 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

5. **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%)
6. **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 - Present
Graduate Fellowship for Stem Diversity (GFSD) Recipient	Fall 2022 - Present
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