MSc Project: Anomaly-Based Intrusion Detection Systems for Denial of Service Attack Detection

Researcher: Afolalu Ayokunle, MSc Cybersecurity Student, University of Southwales.

Date: 22nd of June 2025.

Contact: 30133368@students.southwales.ac.uk

Supervisor: Andrew Bellamy, andrew.bellamy@southwales.ac.uk.

Purpose of the Study

This research project, part of my MSc dissertation at University of Southwales, develops a Python-based anomaly-based intrusion detection system (IDS) using the NSL-KDD dataset to detect Denial of Service (DoS) attacks. I am conducting semi-structured interviews with cybersecurity professionals to gather general insights on IDS functionality, usage, importance, risks, and challenges in workplace settings, as well as perspectives on anomaly-based IDS and dataset relevance (e.g., NSL-KDD vs. modern datasets like CICIDS-2017). Your participation will help evaluate the practical relevance of my software artefact and contextualize the research within industry trends.

Interview Details

Duration: Approximately 15–20 minutes.

Format: Conducted via a secure online platform (e.g., Zoom or Microsoft Teams).

Questions: 12–15 semi-structured questions focusing on general IDS experiences (e.g., operational challenges, integration with security systems) and anomaly-based IDS trends. No company-specific or sensitive information will be requested.

Recording: With your consent, the interview will be audio-recorded for transcription purposes to ensure accurate analysis.

Your Participation

Participation is voluntary, and you may withdraw at any time during or after the interview without penalty or providing a reason. If you withdraw, any data collected (e.g., recordings, transcripts) will be deleted immediately. You are not required to answer any questions you feel uncomfortable with.

Data Collection and Use

Data Collected: Audio recordings (if consented) and anonymized interview transcripts.

Anonymity: Your responses will be anonymized in the dissertation using pseudonyms (e.g., Participant 1). No personal identifiers (e.g., name, company) or company-specific details will be included unless you explicitly consent otherwise.

Purpose of Data: Responses will be analyzed thematically to evaluate the project's software artefact and inform discussions on IDS trends, risks, and future research directions (e.g., validation with CICIDS-2017 dataset).

Dissertation Use: Anonymized findings will appear in the Discussion and Appendix sections (e.g., transcripts in Appendix X). Example: "Participants emphasized low false positive rates (Participant 1, Appendix X)."

Data Storage and Security

Storage: Recordings, transcripts, and consent forms will be stored in a VeraCrypt-encrypted container (a secure virtual disk protected by a strong password) on the researcher's laptop, accessible only to the researcher [and supervisor, if required]. As the laptop itself lacks full-disk encryption, no sensitive data will be stored outside the VeraCrypt container to ensure security. Temporary processing (e.g., transcription via GDPR-compliant software like Otter.ai) may occur, with files deleted immediately after transfer to the VeraCrypt container.

Retention: Recordings will be deleted immediately after transcription. Anonymized transcripts and consent forms will be retained until the dissertation is assessed and then deleted.

Access: Only the researcher (myself) and supervisor, will access the data. No third parties will receive access.

Your Rights

Under the General Data Protection Regulation (GDPR), you have the right to:

Access your data (e.g., request a copy of your transcript).

Request corrections or deletion of your data.

Withdraw consent at any time by contacting 30133368@students.southwales.ac.uk.

Consent

Please read and indicate your agreement by checking the boxes below and signing. A copy of this form will be provided to you for your records.

I understand the purpose of the study and what my participation involves.

I consent to participate in a 15–20 minute interview.

I consent to the audio recording of the interview for transcription purposes.

I understand that my responses will be anonymized (e.g., as Participant 1) and no personal or company-specific information will be included in the dissertation.

I understand that participation is voluntary, and I can withdraw at any time without penalty, with my data deleted upon request.

I understand how my data will be stored (in a VeraCrypt-encrypted container, not on the unencrypted laptop outside the container), used, and deleted, and I am aware of my GDPR rights.

Participant Signature: _____

Date: _____

Researcher Signature: Afolalu Ayokunle.

Date: _____

Contact for Questions or Withdrawal

If you have questions, wish to withdraw, or want to access your data, please contact me at 30133368@students.southwales.ac.uk.

Thank you for your valuable contribution to this research!