4 Jan 19

MEMORANDUM FOR: AFIT/ENG

ATTENTION: MAJ CASEY

FROM: 2d Lt Marvin W. Newlin (GCO-20M)

SUBJECT: Thesis Prospectus:  *Generating Synthetic Network Data for Intrusion Detection Systems*

1. The goal of this research effort is to explore the feasibility of generating synthetic network data for Intrusion Detection Systems (IDS) using machine learning

2. This research would be based on some of the ideas expressed in *Complex log file synthesis for rapid sandbox-benchmarking of security- and computer network analysis tools* by Wurzenberger et al. but would explore similar methods applied to network traffic instead of log data. There is currently a lack of reliable datasets available to effectively train IDS’s so there is a need for synthetically generated data to train these systems.

3.

4.

5.

6. Proposed thesis committee:

a. Lt Col Mark DeYoung, Chair / Thesis advisor \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *(signature)*

b. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *(signature)*

c. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ *(signature)*

7. N/A

8. The coursework completed at AFIT has been planned to provide the foundation of knowledge required to successfully complete this thesis. Courses of particular applicability to the research topic include:

* CSCE 525 Introduction to Cyber Warfare
* CSCE 523 Artificial Intelligence
* CSCE 623 Statistical Machine Learning

Marvin Newlin, 2d Lt, USAF

GCO-19M

1st Ind, AFIT/ENG

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I approve/disapprove the above thesis prospectus and thesis committee. This prospectus will be maintained in the student’s file. The thesis should be prepared in accordance with the AFIT Thesis Guide. Good luck!

DANIEL CASEY, Maj, USAF

Chief, Computer Science Division

Department of Electrical and Computer Engineering