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Nova Southeastern UniversityCollege of Computingand EngineeringTopic Proposal for Term Paper/ProjectISEC 600 Advanced Network SecurityWinter 2021Due Date: 2/28/202111:59PMETTotal Points: 5In order to show understanding on security-related issues, each student is expected to complete a paperon a relevant networksecurity topic of the students choosing and interest. For this assignment I would like to see your topic in awritten proposalwith a brief abstract. An abstract is defined as a formal documentthat clearly describes what you will write the paper on.You may be suggestedto revise your topic after your submission is reviewed. Please choose a FOCUSED topic that is specificenoughfora term paper/project. You have two options for the assignment. Option 1:Research PaperThis paper can be a review paper that comments on current solutions on a specific topic, or a research paper that proposes your own opinions/solutions.You don’t have to implement an application for this option. However,it is fine if you wish to conduct experiments on the topics discussed. Generally, papersthat incorporate your own comments/opinions will normally receive highergrades. Potential topics for both options include (but not limited to) the following.Your choice ofthe topic is usually more specific than any of these topics. ➢Denial of Service ➢Firewalls➢Intrusion detection➢Security Protocols➢Access Control ➢Malware Detection➢Vulnerability Assessments➢Security Architectures➢Encryption

Somepremierjournals and conference proceedings in the field werelisted in the course syllabus. You are requiredto explore useful reference papers using NSU’s electronic library. IEEE,ACM, and Springerdatabases are good resources that can be accessed in the e-library. For more information please visit http://sherman.library.nova.edu/e-library/index.php?action=subject&col=n&cat=cis(NSU student ID is required to access the resources). Click on “ACM Digital Library”, “IEEE/IET Digital Library”, or “SpringerLink” -> enter your credentials, then you can search by key words/author/titles/names of journals or conferences. You will have full access to copyrighted articles published by the three organizations.Option 2: Programming ProjectStudents who want to do a programming project instead of a paper should submit a written project proposal. Your programming project can substitute for a paper only if your project proposal meets my approval prior toMarch 29. If your programming project proposal is not approved, plan to submit a paper proposal and prepare to write a paper.You can visit sourceforge’s website for a list of sample networking applications (https://sourceforge.net/directory/security-utilities/) that you may be interested in. Although you may not be able to implement a full-featuredsystem as those shown on the website due to time constraints, an operational prototype is required for final submission. Additional RequirementsYour proposal should be a formal document that consists of a typed one-to-two-pagesummary of your proposed topic. Although your proposal does not need to present any conclusions, itshould clearly and concisely describe the focus and a plan of your paper/project. Make your proposal as specific as possible.Your topic proposal should contain the following parts:1.A title of the topic.2.A description of the paper/project you wish to work on.3.A rough outline of the structure of your final report.4.A list of references that your work will be based on. For a research paper, this list should contain at least 5 academic publications.

Follow the APA style for all citations and references. More information about APA can be found at the following websites.American Psychological Association:https://apastyle.apa.org/NSU Library:https://sherman.library.nova.edu/sites/apa/Purdue Universityhttps://owl.purdue.edu/owl/research\_and\_citation/apa\_style/apa\_style\_introduction.htmlNote that this proposal is your first attempt to locate a concrete research topic, and you have chances (before the cut-off date) to make revisions and improve your grade. I will respond with suggestions based on your proposal submission and indicate whether your proposed topic is good. In some cases, I maysuggest a different topic, or ask you to write a new proposal. Youcan make required changes bythe cut-off date of March 29to improve your grade on the topic proposal. Based on my experience, in very few cases the proposal can be done in a single iteration. The paper/project report itself is due on April 23. It should have noless than 15 pages, double-spaced and not counting the title page, table of contents, bibliography, or any figures. For a research paper, it should include a bibliography of no fewer than five sources that appear as references in the body. Yourpaper/project report should use headings and sub-headings to reflect its structure. Please proofread your paper/report carefully to ensure that it contains no spelling or grammatical errors. It should conform to the standards of academic integrity describedin the graduate catalogand the course syllabus. Additional Suggestions1. It is not appropriate to write on a very broad topic such as network security, cryptography, intrusion detection systems, etc. Keep in mind thatthis is just a shortterm paper that should fit into a limited time period. You can actually find a textbook for most of these topics. Please choose a topic as specific as possible. 2. Areview paper usually should include multiple (>=5) references. I would like to see references from referred conference proceedings or journals. IEEE,ACM, and Springerdatabases are widelyused by the research community. Referencessuch as Wikipedia can be used at the early stages when you explore a topic, but you are discouraged from using them sincethe information are generally considered volatilefor scientific papers. Usually you should

summarize different resources instead of reiterating the exact words. It is also important to show your ability on critical thinking –I wish you includeas many comments (in your own words) as possible.3. It is fineto choose the programming project option for the assignment. Generally this optionneedsmore efforts than a research paper option. You can implement something new or simulate the functionalities of existing applications –pleasemake your choiceclear in the proposal. You will need to deliver a working prototype in your final submission. The functionalities of this prototype need to be briefly discussed in the proposal. 4. Please note if you cite the exact words from references, you need to usequotation marks on both sides. The paper may be considered plagiarism for failing to do so. You should also payattention to the use of enough citations so that a reader can separate your work from others easily.For more information on the integrity policy please refer to the course syllabus and CCE’sGraduate Catalog(https://computing.nova.edu/graduate/catalogs.html).5. If you plan to propose your own solutions on an existing problem, that would be great.Try your bestand you may end up with a publication based on your course work.I will be happyto assist you duringthe process.6. Please note thatfor all references and citations, you need tofollow the APA format style. This is a requirement by CCE. Failing to do so may lead to the loss of points onyour submission.

Q. Liu, L. Yu and C. Jia, "MovER: Stabilize Decentralized Finance System with Practical Risk Management," 2020 2nd Conference on Blockchain Research & Applications for Innovative Networks and Services (BRAINS), Paris, France, 2020, pp. 55-56, doi: 10.1109/BRAINS49436.2020.9223274.

*Ariah Klages-Mundt, Dominik Harz, Lewis Gudgeon, Jun-You Liu, and Andreea Minca. 2020. Stablecoins 2.0: Economic Foundations and Risk-based Models. In Proceedings of the 2nd ACM Conference on Advances in Financial Technologies (AFT '20). Association for Computing Machinery, New York, NY, USA, 59–79. DOI:https://doi-org.ezproxylocal.library.nova.edu/10.1145/3419614.3423261*

Lewis Gudgeon, Sam Werner, Daniel Perez, and William J. Knottenbelt. 2020. DeFi Protocols for Loanable Funds: Interest Rates, Liquidity and Market Efficiency. In <i>Proceedings of the 2nd ACM Conference on Advances in Financial Technologies</i> (<i>AFT '20</i>). Association for Computing Machinery, New York, NY, USA, 92–112. DOI:https://doi-org.ezproxylocal.library.nova.edu/10.1145/3419614.3423254

Danil Annenkov, Mikkel Milo, Jakob Botsch Nielsen, and Bas Spitters. 2021. Extracting smart contracts tested and verified in Coq. In <i>Proceedings of the 10th ACM SIGPLAN International Conference on Certified Programs and Proofs</i> (<i>CPP 2021</i>). Association for Computing Machinery, New York, NY, USA, 105–121. DOI:https://doi-org.ezproxylocal.library.nova.edu/10.1145/3437992.3439934

Youssef El Faqir, Javier Arroyo, and Samer Hassan. 2020. An overview of decentralized autonomous organizations on the blockchain. In <i>Proceedings of the 16th International Symposium on Open Collaboration</i> (<i>OpenSym 2020</i>). Association for Computing Machinery, New York, NY, USA, Article 11, 1–8. DOI:https://doi-org.ezproxylocal.library.nova.edu/10.1145/3412569.3412579

Benjamin Livshits. 2020. Technical perspective: Analyzing smart contracts with MadMax. <i>Commun. ACM</i> 63, 10 (October 2020), 86. DOI:https://doi-org.ezproxylocal.library.nova.edu/10.1145/3416259