

ECE455

Security Review #0

This assignment is designed to help you practice thinking like a security engineer. It has two parts: a current event review and a security review. We may discuss some of these in class, so come prepared! For example write ups see:

<https://cubist.cs.washington.edu/Security/category/current-events/> (which inspired this assignment) or <https://citizenlab.ca/>.

Overview

- Due Date: Tuesday, September 12 at 6 PM
- Group or Individual: Individual
- How to Submit: Teams submission. Submit one PDF for your current event and one PDF for your security review.

Background

A mindset is developed slowly and constantly. Just attending lectures won't change your way of thinking. This assignment will have you thinking about security outside of class: whenever you read the news, see a new product, or talk to your friends. Thinking about security will soon become second-nature.

Remember! Security is not just about technology. There is a rich political, social, and cultural environment around the technology we use every day. A good solution stops attacks, but a *great* one will mesh with it's users. Many solutions are abandoned dues to clashes with users. Don't design in isolation and think about the big picture.

Part 1: Current Event Review

Your reviews of current events should be well-written. Consider a broad technical audience (such as your fellow engineering students). Your review should both inform this audience and frame the event in the context of cybersecurity.

Your article should:

- Summarize the current event;
- Discuss why the current event arose;
- Reflect on what could have been done differently before the event (perhaps prevent, deter, or change the consequences);
- Describe the broader issues surrounding the current event (ethical issues, societal issues);
- Propose possible reactions to the current event (how should the public, policy makers, corporations, the media, or others respond).

Part 2: Security Review

The technology that you review in Part 2 does not need to be the same as the technology you consider in your current event review in Part 1.

Your goal is to evaluate the potential security and privacy issues with new technologies, evaluate the severity of those issues, and discuss how society might address these issues. These assignments should reflect deeply on the technology that you're discussing, and should therefore be significantly longer than your current events assignments.

Your security review should:

- Summarize (2 paragraphs)
 - Summarize the technology that you're evaluating at a high level: either a specific product or a class of products with some common goal (e.g. pacemakers).
 - If you need to make assumptions about a product, then it is extremely important that you state what those assumptions are.
- Identify assets (1 paragraph)
 - State at least two assets and, for each asset, a corresponding security goal. Explain why the security goals are important.
- Identify threats (1 paragraph)
 - State at least two possible threats: a threat is an action by an adversary aimed at compromising an asset.
 - Give an example adversary for each threat.
- Identify weaknesses (1 paragraph)
 - State at least two potential weaknesses.
 - For the purposes of these security reviews, you don't need to fully verify whether these are actual weaknesses.
 - You may find some overlap with the bullet above.
- Identify defenses (1 paragraph)
 - Describe potential defenses that the system could use or might already be using.
- Reflect and evaluate risks (2 paragraphs)
 - Evaluate the risks associated with the assets, threats, and potential weaknesses.
 - Informally, how serious do you think these combinations are?
 - Provide some thoughtful reflections and discuss relevant "bigger picture" issues (ethics, likelihood the technology will evolve, and so on).