

CSE 484 / CSE M 584

Computer Security

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Thanks to Franz Roesner, Adrian Sham, and other
contributors from previous quarters

Office Hours

- Monday, 4:30-5:30pm, CSE 654 (Franzi)
- Thursday, 11:30am-12:30pm, CSE 021
- Friday, 2:00-3:00pm, CSE 021

Looking Forward

- Ethics form due **April 6, 5pm**
- Homework 1 is out
 - Current event review and security review
 - Groups of up to 3 (only submit 1)
 - Due April 8, 8pm

Security Reviews

- Assets
 - What are we trying to protect? How valuable are those assets?
- Adversaries
 - Who might try to attack, and why?
- Threats
 - What actions might an adversary take to exploit vulnerabilities?
- Vulnerabilities
 - How might the system be weak?
- Risk
 - How important are assets? How likely is exploit?
- Defenses
 - How might we protect against vulnerabilities?

Practice Security Review



Much like cars, various airplane systems are controlled by computers.

This is especially true for airplanes using 'fly-by-wire'

Assets, Adversaries, Threats, Vulnerabilities, Risks, Defenses?

Security Reviews

- Assets
 - What are we trying to protect? How valuable are those assets?
- Adversaries
 - Who might try to attack, and why?
- Threats
 - What actions might an adversary take to exploit vulnerabilities?
- Vulnerabilities
 - How might the system be weak?
- Risk
 - How important are assets? How likely is exploit?
- Defenses
 - How might we protect against vulnerabilities?

Security Review

- **Assets** (what should be protected)
 - Lives of passengers
 - Airplane
- **Adversaries** (possible attackers)
 - Terrorists
 - Ground crew
 - Pilot
 - Supplier
- **Threats** (actions by adversaries to exploit system)
 - Physically take control of plane
 - Interfere with electronics of plane

Security Review

- **Vulnerabilities** (weaknesses of system)
 - On board WiFi
 - USB connections
 - Bad software
- **Risk** (how important are assets, how likely is exploit)
 - High risk asset
- **Defenses**
 - Airport security
 - Air marshal
 - Isolated flight control electronics

In the news



An FBI search warrant states that a cybersecurity professional told an agent he was able to control an aeroplane engine from his seat after hacking the on-board computer system.

The document claims Chris Roberts said he was able to make the plane "climb" and "move sideways" from his seat.

<http://www.bbc.com/news/technology-32780513>

More Practice Security Reviews

- Some ideas for topics:
 - Pacemakers
 - Facebook
 - CSE Building
 - Smartphones
 - Airport security
 - ... ?

Feel free to contact us!

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