CSE 484 / CSE M 584
Computer Security

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Thanks to Franzi 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?
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
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.

More Practice Security Reviews

• Some ideas for topics:
  – Pacemakers
  – Facebook
  – CSE Building
  – Smartphones
  – Airport security
  – ... ?
Feel free to contact us!

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