Is Software Engineering a Profession?

- In many ways software engineering is similar to other professions such as law or accounting
  - Dependence on professional education and practical training
  - Professional associations (IEEE, ACM)
  - Potential for bad decisions to cause significant public harm

- It’s not a “full-fledged” profession:
  - No formal accreditation/licensing system

- All the same, sensible to ask software engineers to follow a code of ethics.
  - One with significant support is described in the book.
  - Nothing it says ought to come as a big surprise at this point in the course 😊.
Whistle-Blowing

• Revealing a real or potential harm to the public being caused by your employer.
  – Not an attempt to take revenge on the employer, e.g., for turning down a promotion
  – Not an attempt to avoid personal responsibility for a problem that is about to come to light anyway.

• Under what circumstances is whistle-blowing morally justified? When is it morally necessary?
Professional Ethics

“Computer scientists and data scientists should not aid in the development of autonomous weapon systems.”

Section 101

A total of 47 voter(s) in 1395 hours
- 6 votes (13%) — Strongly agree
- 12 votes (26%) — Agree
- 9 votes (19%) — Neutral
- 16 votes (34%) — Disagree
- 4 votes (9%) — Strongly disagree

Section 102

A total of 37 voter(s) in 1394 hours
- 2 votes (5%) — Strongly agree
- 6 votes (16%) — Agree
- 9 votes (24%) — Neutral
- 14 votes (38%) — Disagree
- 6 votes (16%) — Strongly disagree
Hacking as a means of warfare/foreign policy

• Cyberwarfare: states as actors or targets
  – North Korea vs USA gov, corporate sites (2009+)
  – Russia vs Georgia, Baltic states, Ukraine (2008+)
  – Stuxnet (2009+)
  – A variety of government, activist sites during Arab Spring (2011)

What hacking/cyberwarfare activities are ethical?

Which are unethical?

What such capabilities should Canada attempt to develop?

What should Canada do to attempt to discourage and/or insulate itself from unethical attacks?
Software Warranties

• Software companies tend to write license agreements saying that the software may not perform as promised
  – “we expressly disclaim … the implied warranties of merchantability and fitness for a particular purpose”

• Why is this reasonable?
  – Software is expensive
  – Other expensive goods are backed up by warranties

• Do software makers have a moral obligation to produce software that does what it promises?