CMPUT 605
Ethics in the Software Development Life Cycle: A Case Study of Health Informatics Systems

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My Background

- B.Sc. Honors Computer Science, American University of Nigeria
- Worked on various software development projects
- Worked on various web applications
- Research focus is on finding social relevance for software and technology
- Research area is in health informatics systems
My Background

- Two courses during my undergraduate studies
- Software Engineering Professional Ethics (SEN 400)
- Ethics and Leadership (PHI 300)
PHI 300

- Ethics in general
  - Philosophy
  - Conceptual issues
  - Society
  - Medicine
  - Leadership
SEN 400

- Ethics in the context of software engineering
- Awareness of ethical issues
  - Ethical issues
  - Codes of ethics and conduct (ACM, BCS, IEEE)
  - Frameworks for software engineering ethics
  - Articles on ethics in software engineering
Papers

- Donald Gotterbarn's paper titled "Software Engineering Ethics"
- Schmoldt and Thompson's paper titled "Ethics in Computer Software Design and Development"
- ACM/IEEE Software Engineering Code of Ethics and Professional Conduct
- Software Engineering Body of Knowledge (SWEBOK)
Ethics and Software

- Ethics comes into play whenever well-being of people is involved
- People use software
- Ethical problems in software design include privacy, accuracy, property, accessibility, quality of life (Schmoldt et al)
- Software engineers need to be aware that their decisions are not just technical
Software engineering ethics can be divided into General, Professional, and Technical (Gotterbarn)

This classification helps train developers on how to resolve questions relating to ethics
How to identify ethical issues when developing software

Distilling ethical issues from user requirements

What can be done at each of the stages of software development

Interpreting existing codes of ethics

Health informatics systems as case study
Scenario

- A software system is created to digitize health records
- During requirement gathering, analysts overlooked impact to workforce
- When new system is introduced, workforce is deskillled and needs training
- When new system is introduced, old workforce is replaced with a tech-savvy workforce
Scenario

- A software system is used to make decisions about the likelihood of survival of patients.
- During development, the software system had a test case that gave an unexpected result, but was ignored as a one-time occurrence.
- The unexpected result occurs again, leading a practitioner to make a wrong decision.