

CSSE490-01 (Spring 2023-2024):

Data Privacy and Protection

Do you find it creepy how much information is collected about you? Interested in building data-centric software that doesn't creep out its users? You should study Data Privacy and Protection! In this class, we will examine what "privacy" means, how it is applied in legal and engineering disciplines, and where software systems go wrong in ways that can be disastrous. We will explore modern techniques for developing software and manage data in ways that protect the privacy of those who the data is about.



In this class you'll read about privacy, build software that violates and then protects privacy, and evaluate systems' ability to protect people's privacy while still using data about them. Through somewhat advanced programming projects, you will implement privacy tools based on recent research papers and study the ethical and legal implications of modern technology through reading and debate.

Instructors: Dr. Sid Stamm

Prerequisites*

- CSSE 230
- Junior or Senior standing
- Desire to learn new programming languages or platforms

Recommended, but not required prior experience:

- CSSE 340/240 Foundations of Cybersecurity
- Operating Systems or Computer Networks experience
- Discrete Mathematics or Combinatorics (from courses like MA 276 and MA 374)

Course Objectives

Students who successfully complete this course will be able to...

1. Explain the benefits and risks of collecting data about people and their activities.
2. Describe threats to personal privacy and approaches that can be used to counter them
3. Apply a privacy framework to reason about privacy risks in a software system
4. Design and build software using modern privacy-protecting strategies or techniques
5. Explain the roles that regulators, software industry leaders, and engineers have in protecting peoples' data
6. Relate ethical/legal implications of data collection and use to their field or desired career