CS481 SP2020 Seminar Topics

Dr. Feng's suggested seminar topics:

1. Topics I know more about

   (a) Computer Security: traditional security models and information flow properties

   (b) Cyber Physical System: security challenges and potential way to prevent information leakage in Cyber Physical System such as smart grid

   (c) Zero Knowledge Proof: security protocol design applying zero knowledge proof

   (d) Software Engineering: software quality metrics

2. Topics I'm interested in

   (a) Distributed System: classical problems such as Byzantine problem

   (b) Computer Architecture: Beyond Reduced Instruction Set Computer (RISC)

3. Topics I know a little bit about

   (a) Data structure and algorithm design: comparison of different data structures in implementations of specific problems

   (b) Information Theory: Shannon Entropy related material (math knowledge/interest required)

   (c) NP-completeness problems and reducibility between them

   (d) Cryptography: Encryption and Decryption (math knowledge/interest required)

   (e) Database Design and Application Development

   (f) Apply Unified Modeling Language (UML) Model a System

   (g) Linux/Unix Operating System Related

4. Other potential application project using following programming languages:

   (a) C++

   (b) Java

   (c) Python

   (d) Matlab

   (e) PHP

   (f) Xampp

   (g) Shell Scripting

   (h) SQL

   (i) SPIN Model Checker