UMBC

AN HONORS UNIVERSITY IN MARYLAND

Spring 2012

CMSC 491/HONR 300: Security and Privacy in a Mobile Social World

Professor: Dr. Anupam Joshi
Time: T/TH 11:30-12:45 p.m.

There are two clear and converging trends in computing today. The first is described as pervasive or ubiquitous computing – computing today is embedded in most manufactured artifacts. Smartphones that typical college students might have carry more computational power than desktops of just a decade ago. The second trend is that of web enabled social computing – a lot of our social interactions are getting replicated online, and many other interactions that normally atrophy due to geographical distances are still being maintained. In fact, younger people often use their mobile devices to access social networking sites in an anytime-anywhere mode! While technology is marching ahead in both these areas, very little attention has been paid to the social and public policy issues, particularly those relating to security, privacy, and trust in this brave new world of pervasive social computing

This 3 credit course will cover the fundamentals of security, privacy and trust in emerging open, dynamic environments created by wireless networks, embedded/handheld/wearable computers, and web based social media and networks. We will look at several recent cases that illustrate the loss of security or privacy engendered by pervasive social computing. We will discuss both the technical and non-technical issues involved. Traditional technical approaches, which assume closed, physically protected networks and rely on authentication to establish authorization, do not work well in this environment. Policy and legislation, even those designed for the internet, have not kept up with this phenomenon and many social norms that constraint our real world behavior have no easy analogs in this brave, new, online world! We will study the issues involved, and the recent efforts from the research community in the area. While a text may be prescribed, most of the reading will be from papers. There will be writing assignments, and a significant group project that will have cross disciplinary teams.

For HONR 300 credit, no assumption will be made about the student's technical background. However, students are expected to have used either social media systems (like Facebook or Twitter) or Smart Phones (e.g. iPhones, Android based phones, etc.). As expected in an honors course, there will be significant discussions in class looking at the security/privacy/trust problems and their potential impacts, and students will be actively expected to participate in them. When discussing solutions and ways forward, greater technical expertise and input will be expected from those students taking the course for CMSC 491 credit, but all students will be expected to discuss the usage, policy and social issues involved. Given the significant penetration of social and mobile technologies in today's students, we believe that regardless of the major, most students will be prepared to discuss the issues involved. In fact, the different perspectives and backgrounds will enable the students to learn from not just the instructor, but each other.