Once a camera captures an image, that image is no longer secure. This is especially problematic in the case of adolescent ‘sexting’ behaviors, where the effects of digital image capture can be devastating and life-long. This research intends to combat adolescent sexting via mobile devices by addressing the problem at the source; the goal is to build a low-powered light sensor that can be mounted on a digital camera lens to detect and/or prevent the capture of nude imagery. Detection of nudity in photos and videos, especially prior to uploading to the internet, is vital to solving many problems related to adolescent sexting, cyber-bullying and the distribution of child pornography. In this thesis, I review the existing literature on nudity detection to identify gaps in current solutions available for mitigating risks related to adolescent sexting behaviors and propose a new solution. I used a low-powered sensor that captures a defocused image. I could separate a skin dominant image from a regular image. If I can increase the accuracy of feature detection in the defocused image, I will be able to detect nudity while preserving privacy and the information can be sent to an application inside that mobile device which can then control the camera according to different mitigation levels.

Major: Computer Science

Educational Career:
Bachelor's of Electrical Engineering, BS, 2013, Lahore University of Management Sciences

Committee in Charge:
Pamela Wisniewski, Chair, Computer Science
Boqing Gong, Computer Science
Gary Leavens, Computer Science

Approved for distribution by Pamela Wisniewski, Committee Chair, on May 1, 2017.

The public is welcome to attend.