CS Masters' Thesis Defense

Title: *Field Testing and Performance Evaluation of a Mobile-Platform-Based QR Code Reader for Multilingual Public Information Display Applications*

Speaker: Pratima Pillarisetti

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Location: GMCS 405

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Abstract:

Art museums and art galleries generally display their artworks accompanied by explanatory signage that contributes to their educational missions. This signage must usually be limited in size in order not to diminish the visual impact of the artworks themselves, and this correspondingly limits the amount of educational information the signage can convey. Such limitations are particularly troublesome for international visitors to galleries and museums, since space limitations usually make it impossible to display copies of even minimal signage in multiple natural languages.

In a 2011 SDSU thesis project, Naga Viswanathan Malepati developed a mobile application to mitigate the above problem. Malepati's application enables a camera-equipped mobile device to act as a real-time multilingual guide for art museum and art gallery visitors. The device's camera captures machine readable codes (QR codes) located unobtrusively on or near each artwork, that identify the artwork and provide an index into a device-hosted multilingual multimedia database containing supplementary textual, audio and video information in the visitor's language of choice.

Since the mobile device application depends on successful reading of the QR code by the device, it is of crucial importance to know how the distance between the camera and the QR code, their relative orientations, color and contrast issues, and ambient light levels, affect the performance of QR code acquisition. This thesis comprised the collection and visualization of field test data relevant to that performance analysis.