SAN DIEGO STATE UNIVERSITY
Leadership Starts Here

SDSU
presents
a thesis defense for
Master of Science
degree in
Computer Science

Thursday,
February 18, 2016

1:00pm
GMCS 405

Navya Kumar

Energy Efficient Video Communication in Wireless Exploration of H.264 Coding Dependency

Abstract

The advancements in technologies like multimedia, video streaming, and animations have enabled us to send high quality data over wireless networks. Wireless communication is more difficult to achieve than wired because, the surrounding environment interacts with the signal by blocking the signal's path and introducing noise and echoes. This has opened up a lot of challenges on reducing power consumption and finding out ways to efficiently transfer data over networks. This thesis proposes a new approach for energy efficient video compression and transmission using H.264.The video compression is enhanced based on intra-frame and inter-frame prediction concepts. Using the compressed data, energy consumption and quality of the frame is calculated. A decision is then made to select the frame that consumes less energy and has good quality. This approach improves video quality and reduces energy consumption during communication. Amount of data that needs to be transmitted and the quality of the frame has a big impact on energy consumption.

Thesis Committee

Wei Wang, Thesis Chair, Department of Computer Science
Carl Eckberg, Department of Computer Science
Mark Dunster, Department of Mathematics & Statistics