SDSU Resources

The current MSCS program prepares graduate students for positions in the design and development of computer systems and applications in business and industry and for scientific positions in industrial or academic computing research. Area of research interest within the department currently include Software Engineering, Medical Image Processing, Parallel Processing, Applied Computing, Computer Networks, Computer Security, Big Data and Cluster Computing.

Most of the courses are taught on campus in smart classrooms. The smart classrooms allow for a variety of methods for student engagement and faculty have the option to record and post their lectures on-line. Majors are required to take a four-course core followed by major-specific required and elective courses. Currently, the CS graduate faculty conduct - research in the following areas:

Convergent Computing Research Group:

The Convergent Computing Technology (CCT) Lab is working on the first phase of focusing algorithm for Microwave Treatment (MT) research project. The first phase of the project is "Development of an anatomical modeling (EM) algorithms based on medical images". The final goal of this research would find a better treatment of brain cancer. CCT Lab is also working a project that implements a unique model of a multidisciplinary research team and industry partnership that will bring to fruition the Strategic Reinvestments that have been made in Precision Agriculture at SDSU by creating innovative knowledge for delivery in our new undergraduate major in precision agriculture. The lab currently employs both M.S. level graduate assistants and one undergraduate assistant, who are working for Drs. Shin and Won. https://www.sdstate.edu/electrical-engineering-and-computer-science/applied-image-processing

Computer Vision and Wireless Embedded Networked Sensor Systems:

Since Dr. Won joined the EECS Department in January 2018, he has strived to establish his research program in the department. His team focuses on the design, analysis, and implementation of new models, algorithms, and protocols for state-of-the-art computer vision and wireless networked sensor systems and mobile computing technology geared toward precision agriculture and intelligent transportation.

Image Processing Laboratory:

Under the direction of Larry Leigh, the SDSU Image Processing Laboratory performs Radiometric, Geometric, and Spatial Characterization, Correction, and Calibration of Satellite and Airborne Imaging Systems.

Founded in 1988, the primary efforts of the laboratory have been towards the research and development of radiometric calibration algorithms for optical remote sensing satellite systems. Areas of greatest contribution include characterization and correction of various artifacts and image noise patterns, precision estimation of relative gains for pushbroom sensors, gain trending and absolute gain estimation using Pseudo Invariant Calibration Sites (PICS), and absolute gain estimation using surface reflectance-based manned vicarious calibration campaigns at a vegetative site. In addition, the laboratory is well known for on-orbit estimation of optical satellite point spread functions.

The SDSU Image Processing Laboratory works closely with USGS EROS and NASA's Goddard Space Flight Center particularly with respect to the Landsat series of satellite sensors. As an example, the recent conversion of the Landsat archive to a consistent reflectance-based calibration was based on analysis from this research group.

We also have broad experience with a wide array of sensors including EO-1 Hyperion and ALI, MODIS sensors, and high resolution commercial sensors such as WorldView, RapidEye, Planet's Doves, and a variety of international sensors such as DMC, Thaichote, and others.