

SYSTEMS DESIGN ENGINEERING

3D Computer Vision and Imaging

SYDE 770 - Topic 9

Spring

This course focuses on 3D computer-vision and camera/optical-based 3D shape-measurement techniques. Topics include image processing fundamentals, stereo-camera 3D measurement, structured-light techniques, laser-camera range-sensing, fringe-projection phase shifting methods, curve and surface representation, surface fitting, and range-image registration. The measurement methods will include setup of measurement systems and calibration of instrumentation. Techniques will be demonstrated and practical exercises will be given. Biomedical applications will be discussed.

Students will complete an individual course project.
No prerequisite.

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