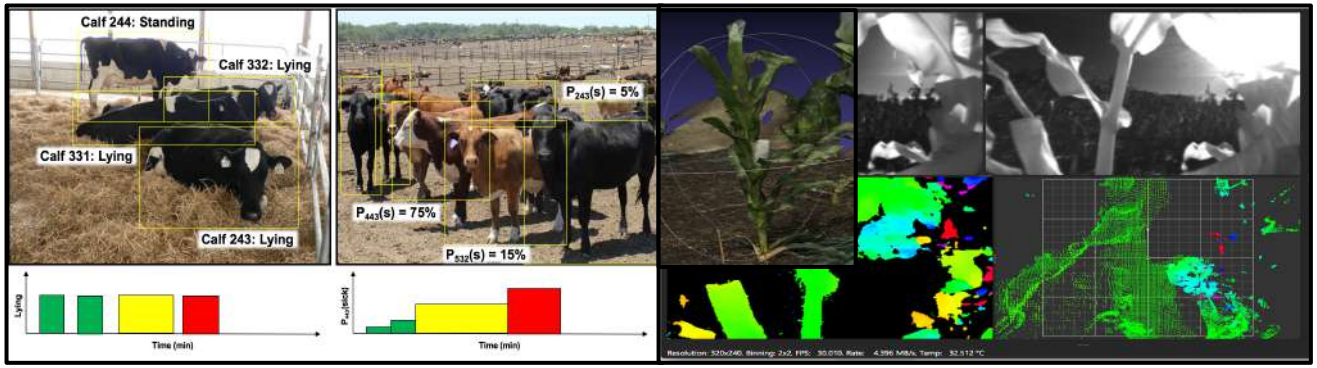
Visual Sensing and Sensemaking



ABE 690: Visual Sensing and Sensemaking is a 3 credit course by Prof. Joshua Peschel to be offered in Spring 2018. This course is an introduction for two- and three-dimensional visual sensing for automated sensemaking in agricultural, natural, and urban systems. You should enroll in this class if you are a graduate student in a science, engineering, or other technical discipline who desires to understand both the theory and hands-on aspects of computer vision for measuring and managing complex systems. The general objectives of this class are:

a) **Three-dimensional image-based reconstruction of objects (e.g., plants, animals, etc.).** This will include two- and three-dimensional computer vision topics in image creation, camera models, multi-view geometry, and reconstruction methods for shapes.

b) **Location and activity recognition of objects.** This will include image processing and vision methods for low-level (e.g., edge and feature detection), mid-level (segmentation, clustering, and filtering), and high-level recognition (categorization and tracking)

c) **Semantic-based analysis and machine learning-based decision making.** This will include transforming visual data into knowledge (identification of objects, how objects relate, and how object interactions can be forecasted upon).

ABE 690 is open to all graduate students that have a science, engineering, or other technical background – contact Prof. Peschel for a syllabus or more information (peschel@iastate.edu).

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

ABE 690
Spring 2018

Lectures:
Monday and Wednesday

Computer Lab:
Friday

Location and Times TBD

You will learn these technologies and more:

OpenCV
ARDUINO
KINECT
RaspberryPi
ROS
python
MATLAB