

Module 1: Machine Vision System for Agriculture

Instructor:

Dr. Young Ki Chang, Assistant Professor, Engineering Department, Faculty of Agriculture, Dalhousie University

Time: Summer Term 2018

Delivery: This module will be comprised of 6 weeks of 2 hour lectures/labs dealing with basics of machine vision hardware from DSLR camera to small image sensor cameras:

Background

This module will introduce agricultural graduate students to the hardware and software of machine vision including software development kit (SDK) for machine vision system. Student needs to learn how to connect SDK and hardware for successful machine vision system. Either Microsoft Realsense or Kinect camera will be provided for the module. Particular topics especially focal length, aperture, the depth of field, and 3D imaging which provide good understanding for machine vision hardware. The module ends with project work and report submission by each student.

Evaluation: Assessment of this module will be in lab coding, the form of weekly assignments and a single report to be submitted at the end of module.

- Laboratory exercise (20%);
- Weekly assignment (30%); and
- Individual project work (includes presentation and report) (50%).

Prerequisites:

Enrollment in graduate program