Smart Farming with Drones Notes

* Inspecting health state of farming using autonomous techniques
* Using drones allow us to get an overall survey of the area and make use of time (assuming its open area using UAVs)
  + In buildings we have automated camera systems similar to the UAVs
* Idea: Assess directly the effective usage of soils and its condition with rapid flight
  + By finding correlation between radar/ camera acquired parameters and soil roughness values from RGB-D cameras/ laser scanners.
* Computer vision techniques from drones/ cameras will allow us to water/spray only where it is necessary from received information
  + Because, using hyper-spectral measures, we can;
    1. Evaluate hydraulic stress of sites (blocks of plants) and then classifying them based on stress level
    2. Assess chlorophyll content
    3. Verify ozone damage on leaves
    4. Differentiate plant species based on leave properties.
* What is used?
  + Low-cost RGB-D camera
  + Asus Xtion Pro (can be replaced with Kinect v2.0)
  + Both for visual analysis of soil, easily embedded into walls, drones, mechanisms on ceilings.
* Camera and data analysis can tell how deep crops are planted, and tell the difference between them.