CSCI 6045: Cyber-Physical Systems

IoT Project : “Smart Field” for Sporting Events

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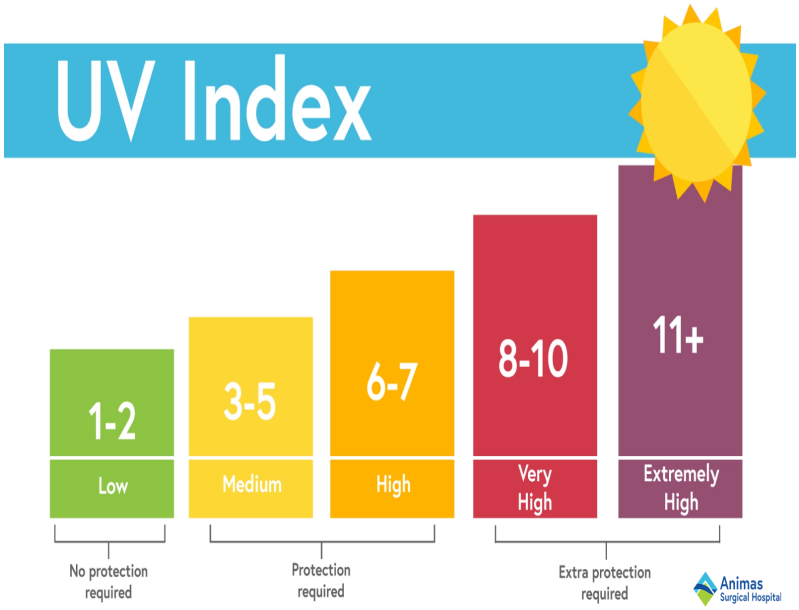
(same team as the ping-pong robot)

Initial Proposal:

We propose setting up a “Smart Field” for sporting events. The field would have moisture sensors in the ground that would detect moisture levels at several locations on the field and would have a UV sensor at the location on the field that gets the most direct sunlight. Each of these sensors would send their information to a server that would process the information and determine if either the field was too wet for use, or the UV ratings were high enough to send out a warning, or both. We would then have an email triggered to relay that information to the coaches, trainers, and other stakeholders. We would like to have a Database with teams, players, and ticket holders, that could be emailed in the event of a warning or cancellation, but we are not planning to implement that part at this time. Customers would be listed with ticket dates and teams/players would be listed with scheduled games and practices so email could be sent to the relevant parties with minimal interaction once the system was set up. We would consider the email being sent as the interaction with the real world, but we would also like to trigger an indicator light on or near the field for UV warnings so that people could take appropriate action if needed.



Prototype:

The prototype specifically would have one moisture sensor, one UV sensor and one server for processing the information and triggering the email and/or indicator lights. There would be multiple indicator lights that could be turned on and the appropriate one would be turned on depending on the levels but an email would only be triggered if the UV levels were extreme.

Future Plans :

We will be adding more information on how we made progress towards the final model as well as the challenges we faced in coming days.