

The Don Difference: John Licato  
Video Transcript

0:00-0:12 Computer science is a very applied field and especially A.I. and Machine Learning. There's a lot of theory to it, but it really becomes more concrete when you actually apply it to a project.

0:13-0:28 I teach courses primarily in A.I. Machine Learning and spend a lot of my time building up this research lab and trying to do A.I. and robotics research with the students.

0:29-1:28 This robot you see here is one of the overall projects. The idea is that there's a coffee shop out there so we want this robot to be able to start over here, drive all the way down to the coffee shop even in a crowded environment when there's people walking all around, order a cup of coffee, carry it all the way back, and then deliver it to us. It sounds kind of like a vanity project or fun project. It is a fun project, but it actually has some very real computer science challenges like how do you recognize where you are in a building just by looking? You can't use GPS. GPS is not that accurate inside ... indoors especially in a building like this. How do you avoid people walking around, stepping on you? How do you carry a cup of coffee without spilling it? That's not an easy challenge either. That's one of the projects that we're working on.

1:29-2:08 I just got awarded this Young Investigators Program Grant from the Air Force Office of Scientific Research and that project is going to focus on what I've been calling "Active Formalization." So humans, at their best, have this ability to simultaneously reason using concepts and also reason about those concepts at the same time. That gives them a sort of flexibility of reasoning that we do not see in any computer systems. Even the most advanced computer systems that we have, they don't have that sort of ability. I want to figure out how to get computers and robots to reason in that way.

2:09-2:38 Of course there's this hard defined notion of common sense that humans sometimes display. But when these robots and systems are deployed, and a lot of them already have been, I think at a minimum we want them to have some understanding of this human notion of common sense. So, how do you do those things? Well, it's not an easy question to answer and that's why I think this research is very important.