1. DR. RAMESH YERRABALLI: Hi.
2. I'm Professor Yerraballi, and this is the University of Texas at Austin.
3. DR. JONATHAN VALVANO: And I'm Professor Valvano.
4. And today we're going to demonstrate this robot we've been building.
5. DR. RAMESH YERRABALLI: OK, so John, let's talk about some of the components
6. on that robot.
7. DR. JONATHAN VALVANO: There are three components.
8. The infrared sensors together with A to D converter
9. are used to measure distance to the wall.
10. The background thread, the interrupt service thread
11. will generate two PWM signals to control the power to the two motors
12. so that I can turn left and right.
13. And the controller, the main loop of the software
14. will adjust the power to the two motors and attempt
15. to drive straight down the road.
16. DR. RAMESH YERRABALLI: OK, so we saw the software, we saw the components,
17. now let's see it run.
18. DR. JONATHAN VALVANO: Yeah, let's try it.
19. Straight down the road, there.
20. Straight down the road.
21. DR. RAMESH YERRABALLI: Wally.
22. DR. JONATHAN VALVANO: Oh, yeah.
23. Nice and straight.
24. DR. RAMESH YERRABALLI: Yeah.
25. DR. JONATHAN VALVANO: Nice and straight, nice and straight.
26. DR. RAMESH YERRABALLI: Take it easy.
27. DR. JONATHAN VALVANO: Look out for the wall.
28. Yeah.
29. And around the corner.
30. Yeah, Wally.
31. Good job.
32. Don't hit the cameraman.
33. DR. RAMESH YERRABALLI: So Jon, what have we learned from this lab?
34. DR. JONATHAN VALVANO: Today we learned that the sensors collect information,
35. and the A to D converter on the micro controller
36. converts that information into digital numbers.
37. The software then can make decisions on those numbers,
38. and then have outputs connected to actuators that can affect the world.
39. DR. RAMESH YERRABALLI: So that's it.
40. Embedded Systems shape the world.
41. DR. JONATHAN VALVANO: Indeed.