



CS4HS 2006 Carnegie Mellon







CS4HS

Explorations in Computer Science
for High School Teachers

Carnegie Mellon University
July 21-24, 2006



I ❤️ ROBOTS
Carnegie Mellon
THE ROBOTICS INSTITUTE
http://www.cmu.edu

Alice
making computer programming fun!
Carnegie Mellon
www.alice.org

Carnegie Mellon
CS4HS SUMMER WORKSHOP
Holly Eckart
Columbia, MD





Alice

makes computer programming fun!

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CS4HS SUMMER WORKS

Explorations in Computer Science for High School



Carnegie Mellon University
July 21-26



Carnegie Mellon
CS4HS SUMMER WORKSHOP
Tom Cortina
Chair

Carnegie Mellon



CS4HS SUMMER WORKSHOP

Explorations in Computer Science for High School Teachers



Carnegie Mellon University

July 21-24, 2006







Carnegie Mellon
CS4HS SUMMER WORKSHOP
Craig Nevill-Manning









Carnegie Mellon
CS415 SUMMER WORKSHOP
Jeannette Wing
Host
Computer Science Department

Carnegie Mellon
School of Computer Science



Carnegie Mellon
School of Computer Science

Carnegie Mellon
School of Computer Science
Wing
Chairman













A man with a beard and short dark hair, wearing a blue and white checkered button-down shirt, is speaking at a podium. He has a small black lavalier microphone clipped to his shirt. On the left chest of his shirt is a small, dark blue embroidered logo consisting of the letters 'CM'. He is gesturing with his right hand. The podium in front of him is white and features the Carnegie Mellon School of Computer Science logo. In the background, a computer monitor is visible on a stand.

Carnegie Mellon
School of Computer Science

Google™

Turning High School Students
Into Potential Google Engineers

Craig Nevill-Manning
Director, New York Engineering
Google Inc.

















13

Please Porridge

hot

2

~~Please porridge~~

~~cold~~

3

~~Please porridge~~

~~in~~

the p

~~nine~~ days ~~old~~

Bar









|||| || | |||

to be to be to be



Carnegie Mellon
School of Computer Science









CS4HS at Carnegie Mellon





CS4HS et Carnegie Mellon

Carnegie Mellon

llon





CS4HS at Carnegie Mellon



My name: Manuel

CAKE - CUTTING LECTURE



EYE







DIATOR

ts is finite

straight-line

dice.



CS4HS at Carnegie Mellon



for all i

protocol

every die

$V \dots V P_k$

$V(p_i)$

MEDIATOR

cuts is finite

straight-line

ce.

CS4HS at Carnegie Mellon

Manuel Blum

FAIR $\nrightarrow$ ENVY-FREE
HW:

Protocol:
A: $\div$ cake
B: Take lar
C: Take
A: take

FREE ... BRIDGE + CONWAY
for $n=3$.

A
B
C
E-V to A
E-V to B











Carnegie Mellon
School of Computer Science









1
2
3
4
5

1
2
3
4
5

1
2
3
4
5

1
2
3
4
5



Flip 1 has to
Flip 2 must





worst
pancakes.

Lower
Bound

$? \leq P \leq ?$

Upper
Bound







One "Simp"

A host of
problem
and
applicatio
at the
frontiers
science





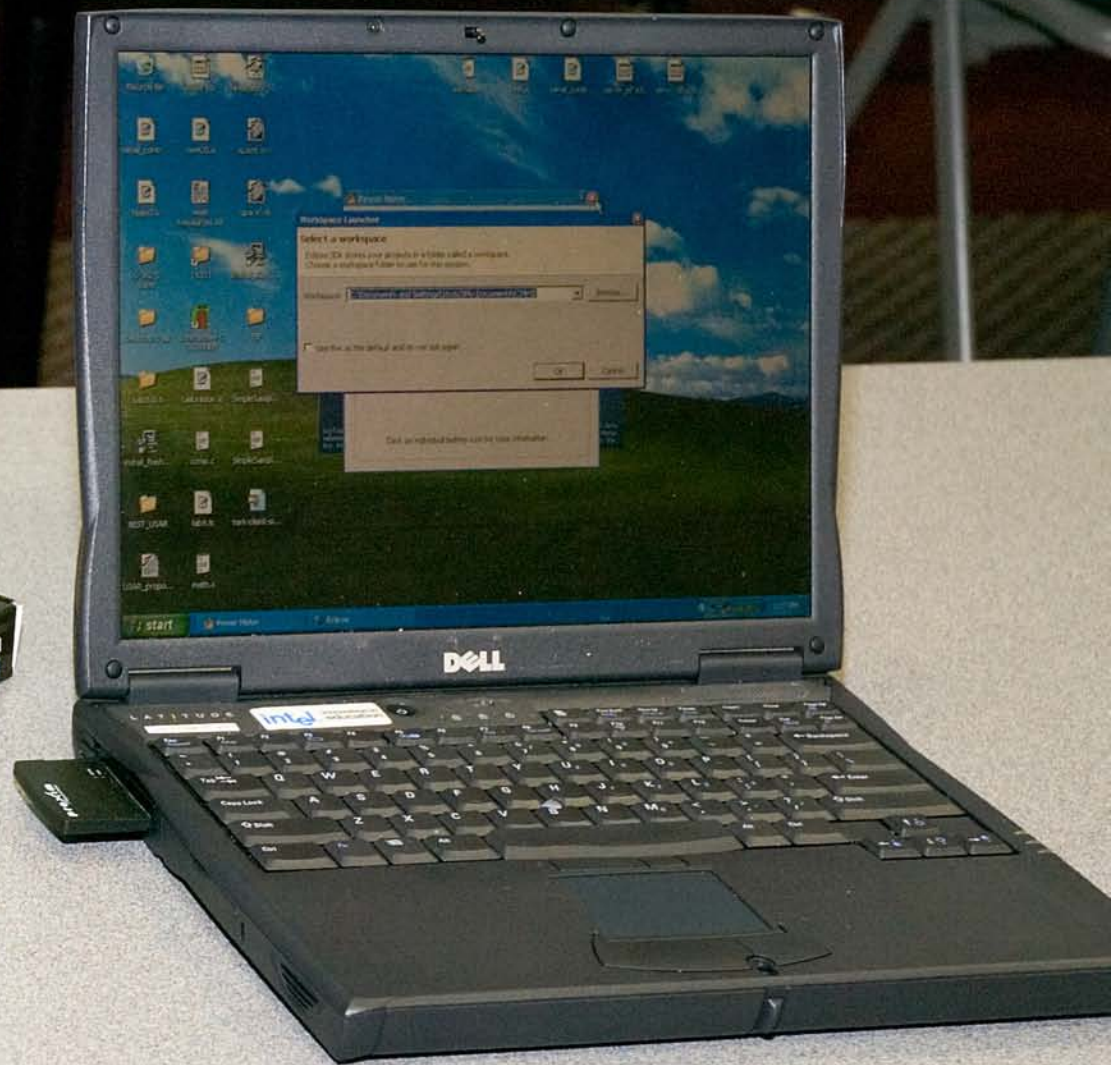
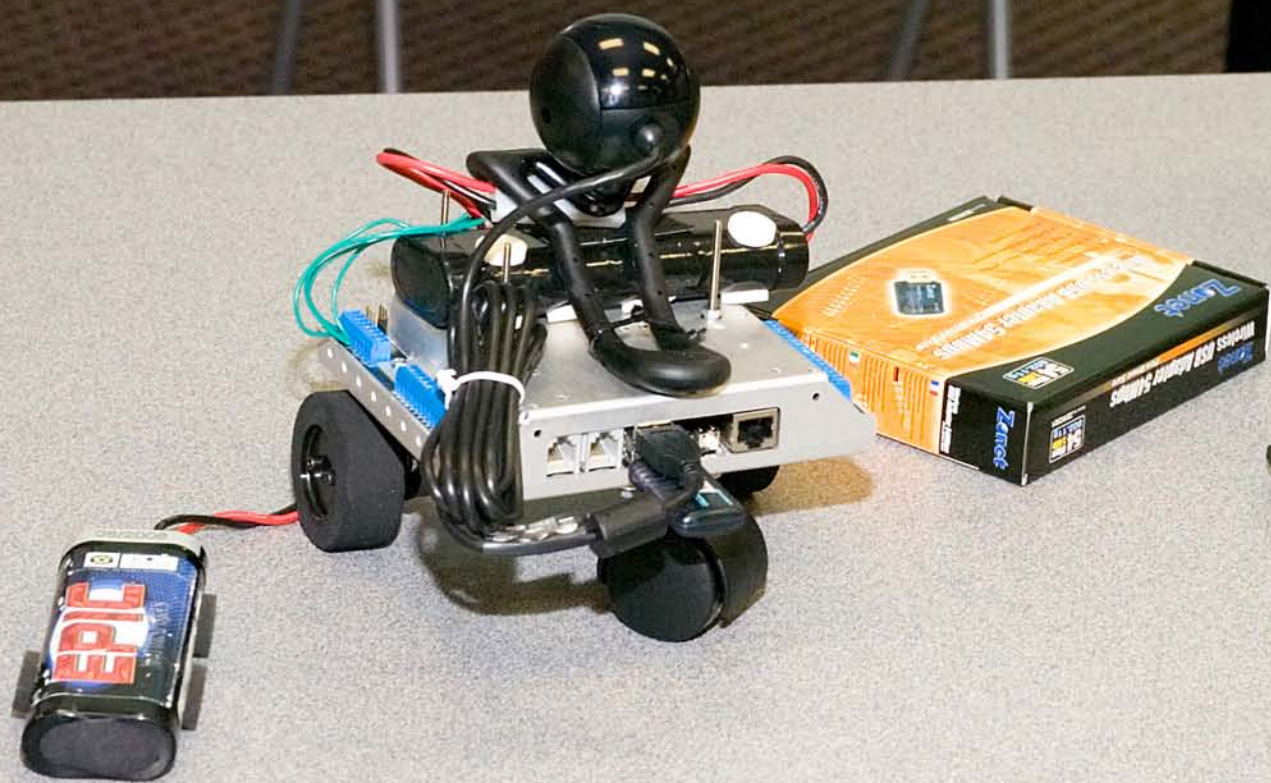
















One webcam

One wireless adapter

Speakers

Eight LEDs

Eight analog sensors

Sixteen sensors

CS4HS Workshop, July 23, 2008

CS4HS

TE



Carnegie-Mellon
COOPER SUMMER WORKSHOP
Tom Lauwers
Robotics Institute





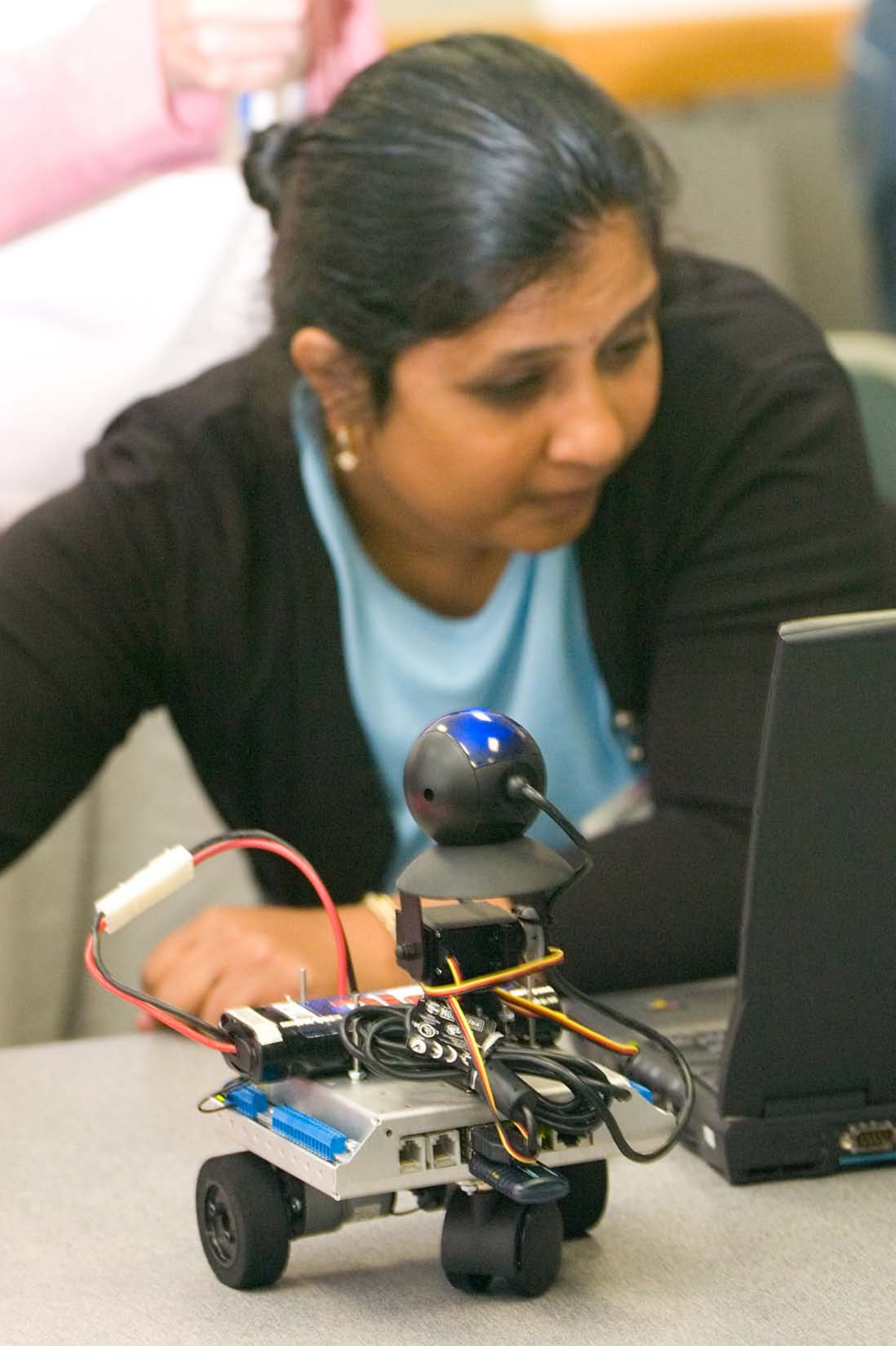




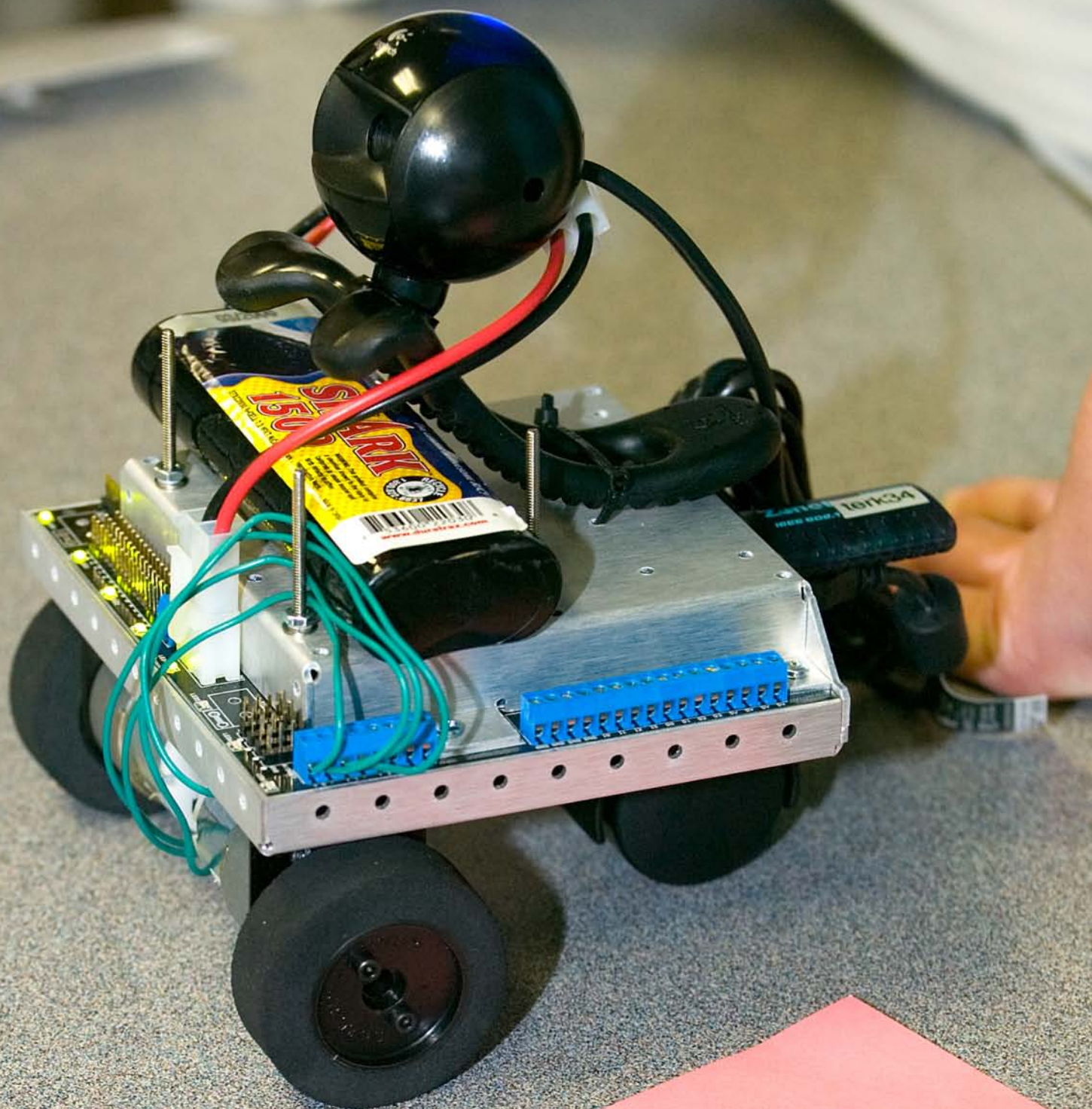


















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CS4HS SUMMER WORKSHOP
Dave Touretzky
Computer Science













There are only 2 types
of people in the world:
those who understand binary
and those who don't.