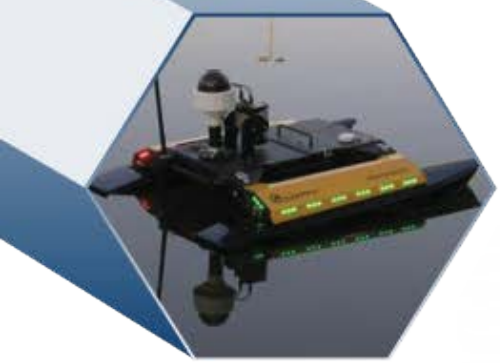
ROBOT 2017 ALL-STARS

KINGFISHER

Georgia Tech

ROBOT 2017 ALL-STARS



Position: Environment Monitoring Robot

Coaches: Cédric Pradalier, Shane Griffith

Stats: Autonomously surveys and monitors changes in shore appearance over long duration using collected images; used for ecosystem monitoring, infrastructure state evaluation, and research on perception for natural environments

Hometown: DREAM Lab at Georgia Tech-Lorraine

Fun Fact: Collected more than six million images over 120 km of autonomous operation since 2013

KINGFISHER

Georgia Tech

ROBOT 2017 ALL-STARS

RAEG

Georgia Tech

ROBOT 2017 ALL-STARS

Position: Musical Robot (Robotically Augmented Electric Guitar)

Coaches: Gil Weinberg, Takumi Ogata

Stats: Allows musician to perform on fret-board while robotic components excite and dampen the string; a human performer and robotic mechanisms produce sounds jointly

Hometown: Robotic Musicianship Lab

Fun Fact: This guitar can already perform complex rhythmic patterns that its creator wouldn't be able to play

RAEG

Georgia Tech

ROBOT 2017 ALL-STARS

COZMO

Georgia Tech

ROBOT 2017 ALL-STARS

COZMO

Position: Educational Mobile Robot

Coaches: Sonia Chernova, Vivian Chu, Jing Dong, Yang Tian

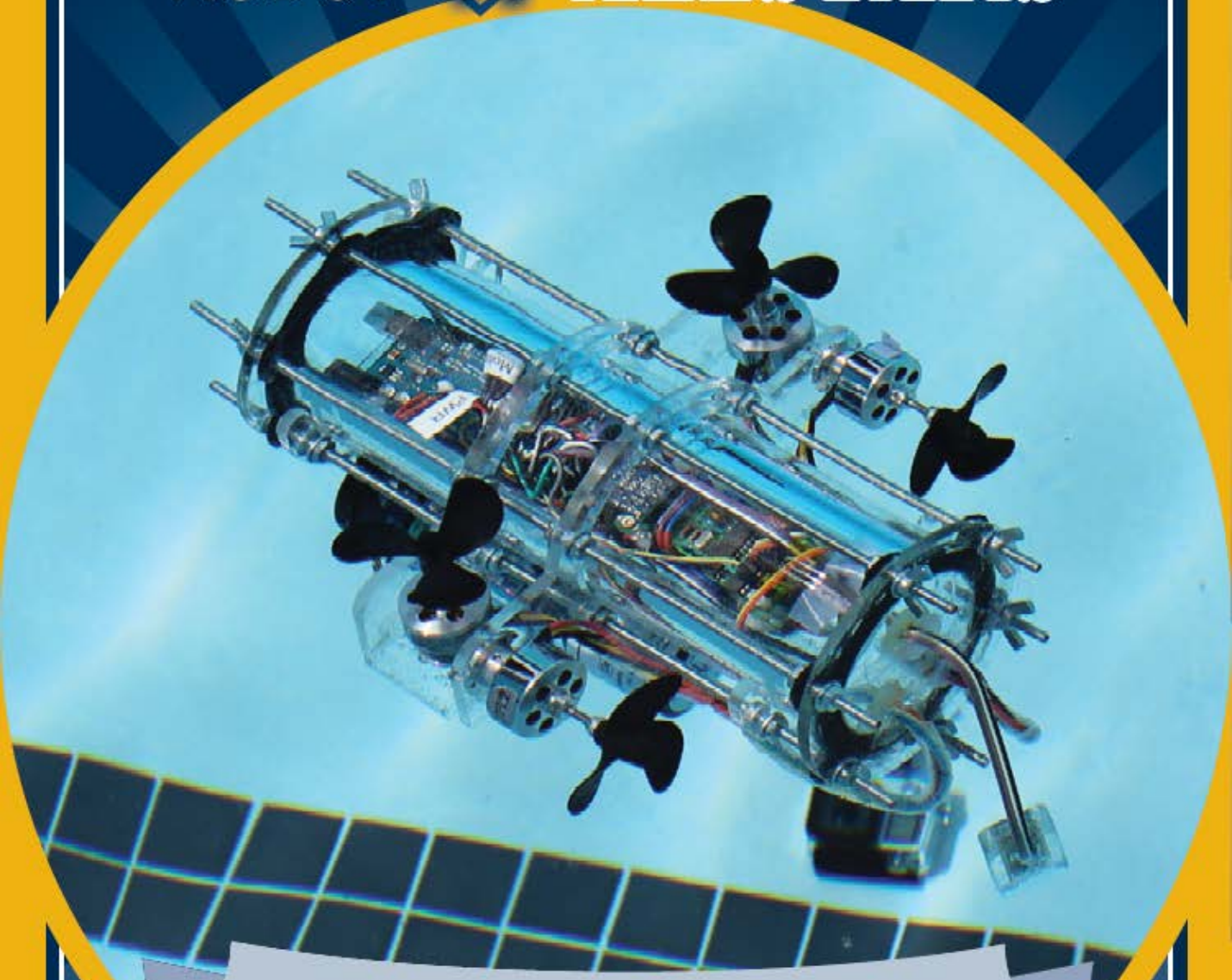
Stats: Has a variety of sensors that allow it to see people, move objects (blocks), and navigate in the world; the API allows students to learn how to program robots to localize and navigate environments and interact with people

Hometown: Robot Autonomy and Interactive Learning (RAIL) Lab

Fun Fact: Cozmo is used in a class of 250 students and you can find 100 of them roaming around during lab hours

Georgia Tech

ROBOT 2017 ALL-STARS



GT-MUR

Georgia Tech

ROBOT 2017 ALL-STARS

Position: Autonomous Underwater Robot (Georgia Tech Miniature Underwater Robot)

Coaches: Fumin Zhang, Qiuyang Tao, Sean Maxon

Stats: A small underwater vehicle used dually as a research and educational platform; GT-MUR is a perfect platform for environmental sampling, human-robot interaction, and a multi-robot sensing network

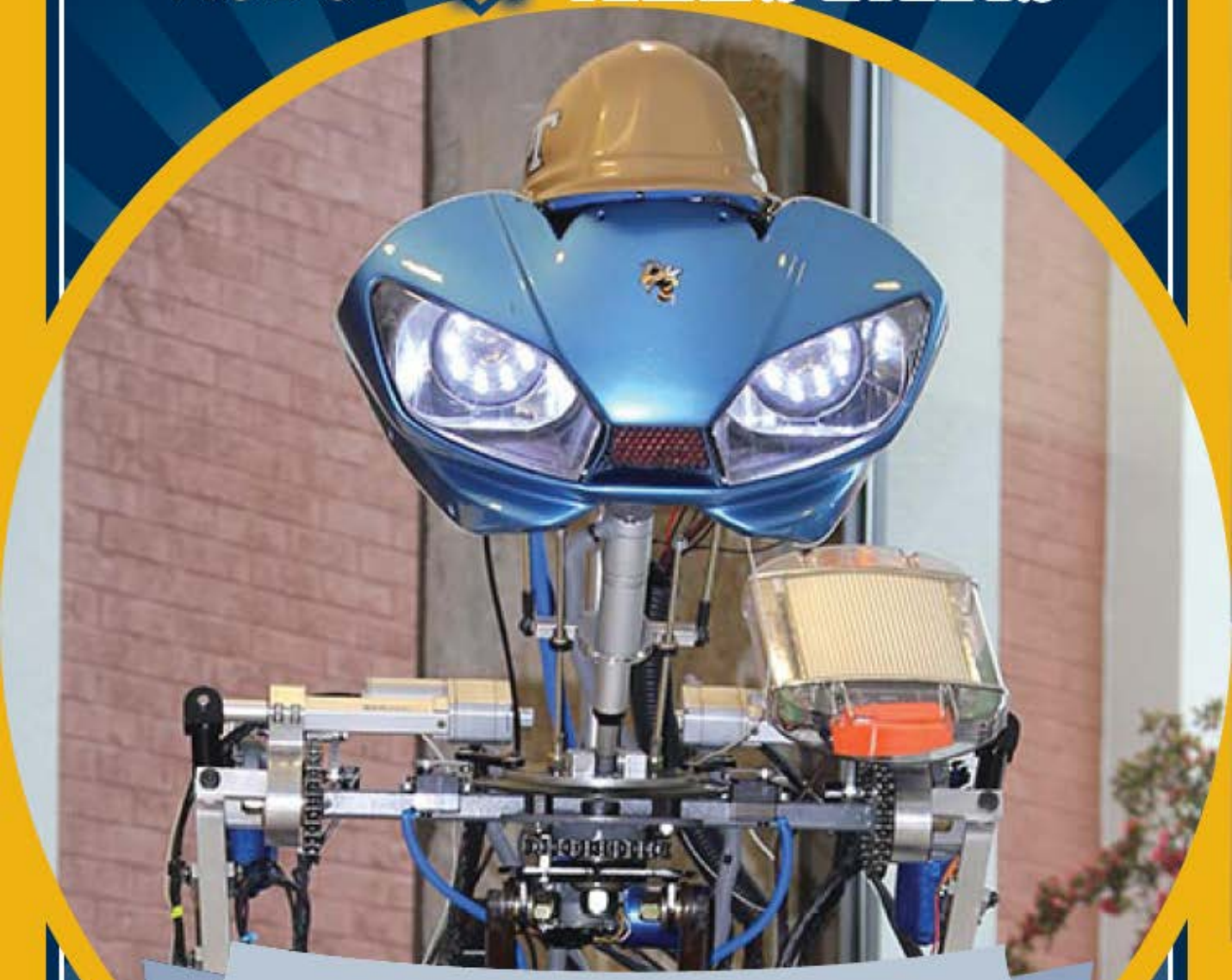
Hometown: Georgia Tech System Research (GTSR) Lab

Fun Fact: This underwater robot is shorter than a foot-long sandwich

GT-MUR

Georgia Tech

ROBOT 2017 ALL-STARS



AWSM

Georgia Tech

ROBOT 2017 ALL-STARS

Position: Mobile Manipulator Robot (Autonomous Working Smart Machine)

Coaches: Yong K. Cho

Stats: Contains multiple manipulators enabling it to assist with human-robot collaborative tasks that require handling complex objects; uses a dual teleoperated, hand-arm system to function in hazardous environments as part of a disaster relief team

Hometown: Robotics and Intelligent Construction Automation (RICAL) Lab

Fun Fact: Boasts 15 degrees of freedom, 19 rotational servos, and three linear servos

AWSM

Georgia Tech

ROBOT 2017 ALL-STARS

Charlie Kemp

Henry Evans

AUTOBED

Georgia Tech

ROBOT 2017 ALL-STARS

AUTOBED

Position: Assistive Robot

Coaches: Charlie Kemp, Henry Evans, Phillip M. Grice, Yash Chitalia, Megan Rich, Henry M. Clever, Ari Kapusta

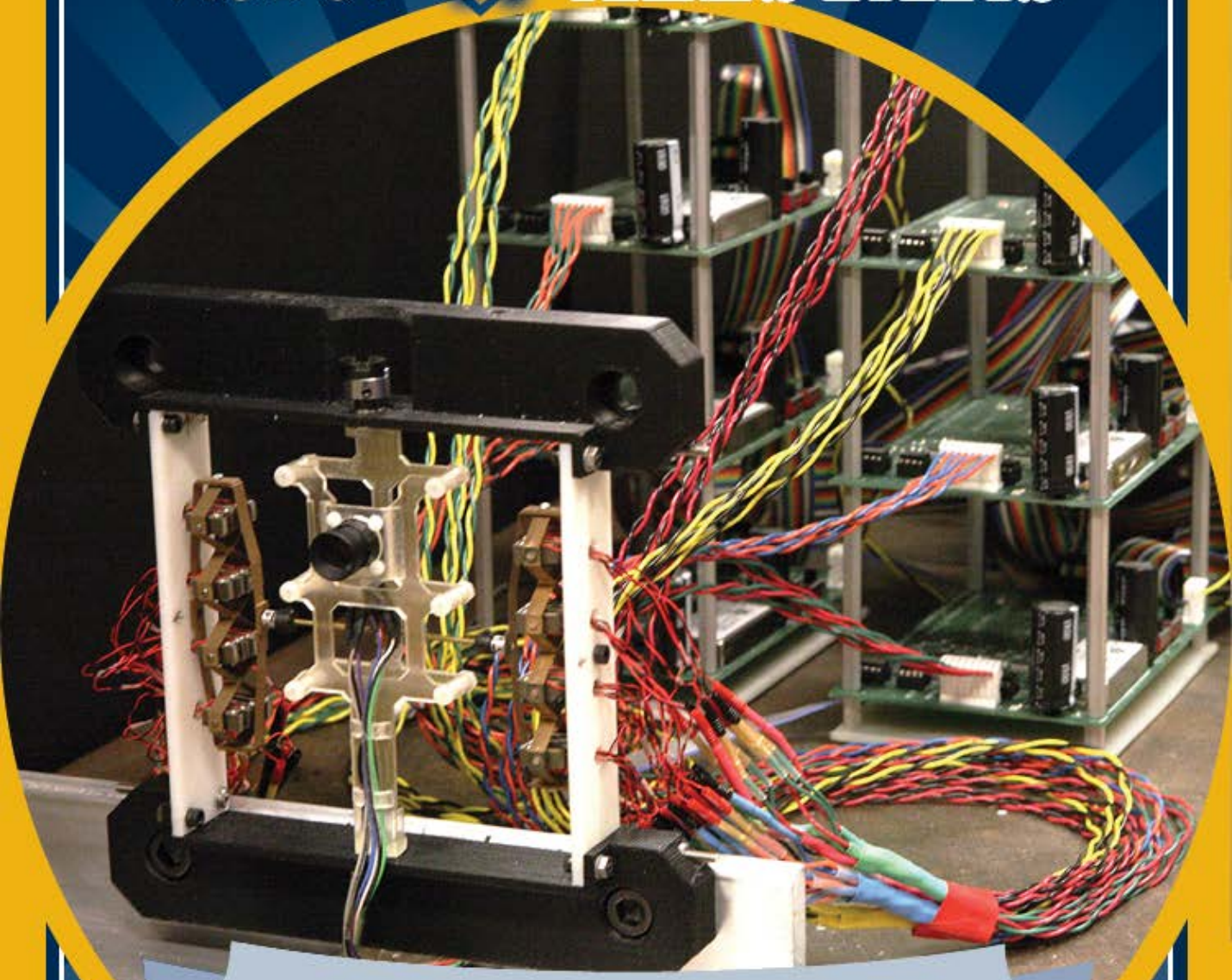
Stats: A robotic bed that can sense and reposition a person's body; more than two years of use in the home of a person with severe quadriplegia

Hometown: The Healthcare Robotics Lab

Fun Fact: Collaborates with other robots to provide assistance; Invacare is working to commercialize part of Autobed

Georgia Tech

ROBOT 2017 ALL-STARS



BIOROBOTIC EYE

Georgia Tech

ROBOT 2017 ALL-STARS

Position: Bio-Inspired Robot

Coaches: Jun Ueda, Joshua Schultz, Michael Kim

Stats: The fast-moving robotic eye reproduces saccades and smooth pursuit like ocular movements in coordination with dynamics-based image processing methods

Hometown: Biorobotics and Human Modeling Lab

Fun Fact: It can move as quickly as the human eye

BIOROBOTIC EYE

Georgia Tech

ROBOT 2017 ALL-STARS

LEAF PICKING ROBOT

Georgia Tech

ROBOT 2017 ALL-STARS

LEAF PICKING ROBOT

Position: Agricultural Robot

Coaches: Gary McMurray, Konrad Ahlin, Ai-Ping Hu, Nader Sadegh

Stats: Uses machine learning to recognize healthy and unhealthy leaves in a peanut field; the robot then uses visual servoing to approach the leaf and grasp it

Hometown: Food Processing Technology Lab

Fun Fact: The robot will be installed on a tractor in the summer of 2017 to work in a Georgia peanut field

Georgia Tech

ROBOT 2017 ALL-STARS

DE2BOT

Georgia Tech

ROBOT 2017 ALL-STARS

Position: Educational Robot

Coaches: Tom Collins, Kevin Johnson

Stats: Using a dedicated FPGA development board, this robot evolves each semester as students enrolled in the ECE 2031 course add new hardware capabilities or a new software application

Hometown: Digital Design Lab

Fun Fact: Used by about 2,500 Georgia Tech undergraduates so far (likely more than any other robot), DE2BOT introduces robotics novices to the realities of robot perception and control

DE2BOT

Georgia Tech

ROBOT 2017 ALL-STARS

FLORA

Georgia Tech

ROBOT 2017 ALL-STARS

Position: Experimental Apparatus (Fast, Low-Luminance Organism-Robot Arena)

Coaches: Simon Sponberg, Steven Chandler, Ravi Chauhan

Stats: As a high-precision positional controlled artificial flower, moths will feed from the attached sugar water vial, which allows researchers to prescribe a trajectory for the moth to fly, thus enabling study of the moth's control strategies

Hometown: Agile Systems Lab

Fun Fact: All electronics and motors must be covered during experiments by a flexible cloth to protect FLORA from moth poop

FLORA

Georgia Tech