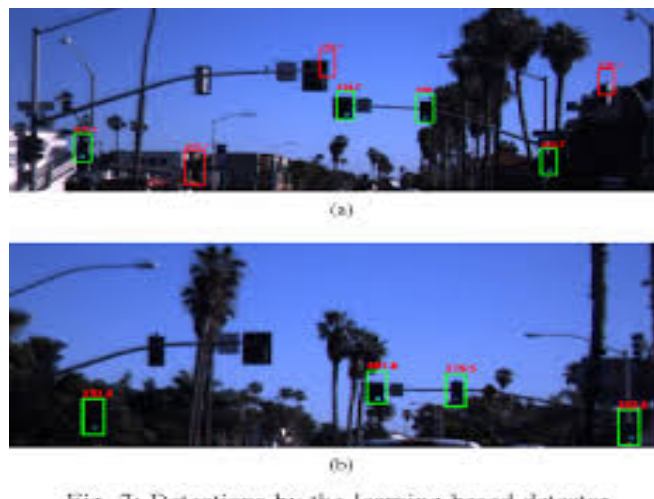


IEEE Brainwaves

IEEE Brainwaves Newsletter is published by the IEEE Brainwaves student chapter of D.J. Sanghvi College of Engineering

IEEE Brainwaves Feature Events :

Highlights from Seminars and Workshops



HAPTIC ARM

Haptics is the science of applying touch sensation and control for interaction with virtual or physical applications. In combination with a visual display, these Haptic Arms are useful in Human-machine interface and Industrial Automation. Haptic technology can be used to train people for tasks requiring hand-eye coordination, such as Robotic Tele Surgery and Space-ship maneuvering. Arduino- a popular 'Open-Source Embedded Development Board'- uses sensors, actuators and an integrated development environment for developing different types of projects. In this workshop we trained the students to control a Robotic Arm using Haptic Technology by the Embedded Board.

Introduction to Hardware and Software of Arduino Development platform

Exposure to design of Robotic Arm and its control procedures

Developing the Electronics circuitry involved in Robotic Arm

Understanding and implementing the Robotic Arm control using Sensors

Learning about the Embedded Programming to Control the Robotic Arm

Hands-on experience for participants with Human-machine interfaces

IMAGE PROCESSING

Image Processing is a method to convert an image from one form to another, and perform some operations on it. Image Processing is a rapidly growing technology. The workshop will help students gain working knowledge about the various types of image acquisition and image recognition techniques (distinguish an object in an image). Practical experience covering basic to advanced Image processing techniques Interactive Practical sessions on Traffic Light Recognition and processing methods Exposure to identification of the shape, color and tracking of an Object Participants will develop skills used in real time applications of Image processing

GESTURE BASED ROBOTICS

Gesture Based Robotics (also known as Accelerometer Controlled Robotics) deals with robots which involve human-machine interaction- where a robot is controlled through hand movements. The robots take inputs from accelerometer sensor and are controlled by programmed microcontrollers.

The workshop helps participants understand the concepts and use of accelerometer sensor, microcontrollers and other electronic components used in Robotics. It also includes training on microcontroller programming using embedded C in order to control the robots.

IEEE Spectrum Article :

Chris Anderson's Expanding Drone Empire



Illustration 1: Fly, My Pretties: Chris Anderson [center] and his merry band of dronemasters test multicopters near San Francisco Bay.

At the former Wired editor's start-up, 3D Robotics, open-source robots take to the skies

Friday is Fly Day at 3D Robotics, a maker of small robotic aircraft. So here we are, on a windswept, grassy landfill with a spectacular view of San Francisco's Golden Gate Bridge, looking up at a six-prop copter with a gleaming metal frame. It's like a spiffy toy from the future. Buzzing like a swarm of bees, it lifts off smartly, hovers, then pinwheels.

"Jason's making the hex twirl," says CEO Chris Anderson, a trim man in jeans and an untucked oxford shirt. "That's just for show—a human pilot couldn't do that." That's because Jason, the flight tester, did nothing more than figuratively push a button. The hexarotor—technically, the 3DR Y-6—is on autopilot, which it demonstrates by zooming off on a preprogrammed route. The Y-6 sells for US \$619. That's a lot for a toy, but it's chicken feed for a capital investment.

These mini unmanned aerial vehicles, a.k.a. UAVs, a.k.a. drones—are changing from toys into tools, as businesses worldwide awaken to their

importance. It's happening fast: Twenty thousand of these inanimate insects will be skittering through U.S. skies by decade's end, according to the Federal Aviation Administration. That's provided the FAA soon issues regulations for their commercial use, a job it was supposed to have completed long ago.

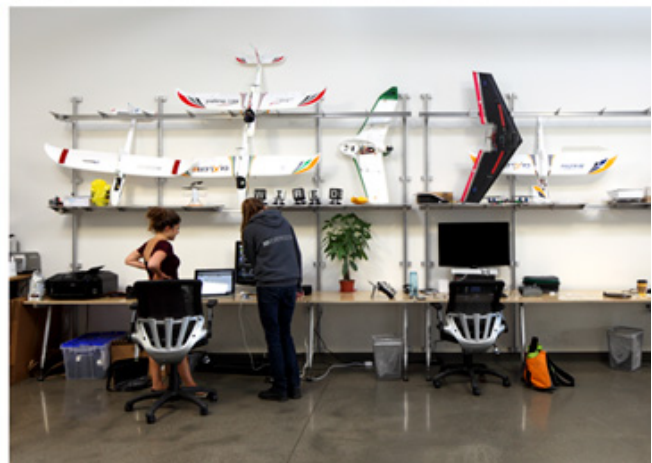


Illustration 2: The Buzz of a Billion Bees: Chris Anderson [top] tests a quadcopter outside the company's office, in Berkeley, Calif., where some virtual design work [lower right] is done. A beefier "hex" hovers at a nearby park [lower left].

Continue Reading at

<https://spectrum.ieee.org/aerospace/aviation/chris-andersons-expanding-drone-empire>