

tr35 Technology Review's annual list of 35 **INNOVATORS UNDER 35**



Ashish Bhat, 26
The world's smallest and lightest autonomous unmanned aerial vehicle.

Ideaforge Technology

Think of a simple device that can be used for anti-terrorist operations, counter-insurgency in forested areas, hostage situations, border infiltration monitoring, local law enforcement operations, search and rescue operations, disaster management, aerial

photography and more! Ashish Bhat, one of the founders of the Mumbai-based ideaForge Technology, has developed the world's smallest and lightest autonomous unmanned aerial vehicle (UAV), called the Carbon.

The device has been manufactured using carbon fiber composites, and hence the name. Carbon's intuitive point and click graphical user interface requires minimal user assistance. It flies using four high-speed propellers (quadrotor) that allow vertical take-off and landing and provide the power to soar through the skies. The on-board stabilization is achieved by a smart intelligent auto-pilot controller receiving inputs from a GPS, gyro, magnetometers, accelerometers, and altitude sensors. The built-in intelligence in the controller system equips the UAV to return to the starting point on its own.

"The quadrotor is a highly complex system compared to fixed wing, and it is one of the best in the world," says Hemendra Arya, associate professor, Department of Aerospace Engineering, IIT Bombay.

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CURRENTLY READING: **Ashish Bhat**

The Carbon weighs just 1.5 kilograms and has a range of one kilometer. With externally swappable Li-Pc batteries, it can fly up to 30 minutes per battery charge.

Bhat's UAV has won a prize for the Best Autonomous Hovering Vehicle from among 16 international teams in the first US-Asian Demonstration and Assessment of Micro Aerial and Unmanned Ground Vehicle Technology.

2010 TR35 WINNERS

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- [Biomedicine](#)
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Aaron Dollar
Creating flexible robotic hands

Rikin Gandhi
Educating farmers through locally produced video

Kim Hazelwood
Reengineering software on the fly

Indrani Medhi
Building interfaces for the illiterate

Andrey Rybalchenko
Stopping software from getting stuck in loops

T. Scott Saponas
Detecting complex gestures with an armband interface

Jian Sun
Better image searches

Richard Tibbetts



Innovators from 2011



Pieter Abbeel, 33

Robots that learn from people
University of

California, Berkeley



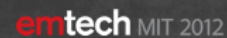
Paul Wicks, 30

Networking patients to combat chronic diseases
PatientsLikeMe

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