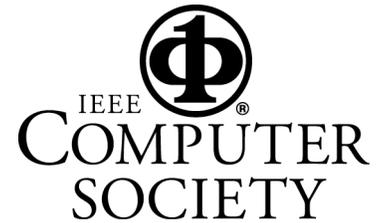


**PRINCETON ACM / IEEE-CS CHAPTERS  
JUNE 2013 DINNER MEETING**



## **Aerial Robot Swarms**

Vijay Kumar

Princeton Chapter of ACM / IEEE Computer Society will close its 2012-2013 season of monthly meetings with our annual dinner meeting.

Robot Swarms are groups of robots that work together. Instead of using a central control, the robots are coordinated in a decentralized and distributed manner. The individual robots are very simple, but they can often do complex tasks. This talk will shed light on the complexities and issues related to multi-robot systems and micro aerial vehicles.

**Vijay Kumar** ([www.seas.upenn.edu/~kumar](http://www.seas.upenn.edu/~kumar)) studies collective behaviors in biological and robotic systems. He and his research group design novel architectures, create abstractions for systems of interacting individuals, and develop new algorithms for cooperating robots. The overarching themes in his research include modeling nature and developing bio-inspired architectures and algorithms, understanding group/individual dynamics, and the design and composition of controllers for robust, scalable autonomous systems. Vijay's key challenges include operation in unstructured, dynamic environments, integration of control, communication and perception, and scaling down to smaller sizes with limited actuation, sensing, and computational resources.

Occasionally referred to as University of Pennsylvania's High Priest of Drones, Professor Vijay Kumar is actually the Deputy Dean of Education and UPS Foundation Professor in the General Robotics, Automation Sensing and Perception (GRASP) laboratory of the School of Engineering and Applied Sciences. Dr. Kumar holds a Ph.D. in Mechanical Engineering from Ohio State University, and has been elected a Fellow of the IEEE and the ASME. He has received the Lindback Award for Distinguished Teaching and an NSF Presidential Young Investigator award.

Dr. Kumar's 2012 TED talk on robot swarms can be found here on the web:

[http://www.ted.com/talks/vijay\\_kumar\\_robots\\_that\\_fly\\_and\\_cooperate.html](http://www.ted.com/talks/vijay_kumar_robots_that_fly_and_cooperate.html)

Dr. Kumar also appeared on PBS's NOVA program "Rise of the Drones" in early 2013:

<http://www.pbs.org/wgbh/nova/military/rise-of-the-drones.html>

This meeting is co-sponsored by **IEEE Robotics and Automation Society**.

The June dinner meeting will be the final Princeton ACM/IEEE-CS meeting of the 2012-2013 season. Monthly meetings will resume again in October 2013.

Date: Thursday, June 13, 2013, 7:00 pm (cash bar at 6:30 pm)  
Place: Mercer County Park Boathouse Marina, West Windsor, NJ  
See directions below  
Information: Dennis Mancl (908) 582-7086, Jan Buzydlowski (610) 902-8343  
On-line info: <http://www.acm.org/chapters/princetonacm>

**ADVANCE RESERVATIONS REQUIRED** – please follow instructions below

To make reservations for the dinner meeting, visit this page on the IEEE vTools website:

[https://meetings.vtools.ieee.org/meeting\\_view/list\\_meeting/17011](https://meetings.vtools.ieee.org/meeting_view/list_meeting/17011)

or contact Dennis Mancl (phone (908) 582-7086, email [mancl@alcatel-lucent.com](mailto:mancl@alcatel-lucent.com)).

Please make your reservation by June 8. The dinner cost is \$30.

Two options for payment:

- Bring \$30 (cash or check) to the meeting.
- Credit card payment in advance (\$30 plus \$0.99 service charge) through the IEEE vTools website.

Directions to Mercer County Park Boathouse Marina:

- US 1 to Quaker Bridge Rd. (Rt. 533 South)
- 2.8 miles on Rt. 533, turn left on Hughes Dr.
- 0.7 miles on Hughes Dr., turn left at entrance to Mercer County Park
- 1 mile on park road, turn left to Marina parking