



**AUTONOMOUS  
CONTROL &  
INFO TECH**

**TECHLAV**

<b>TOPIC</b>	<b>Implementing consensus-based tasks in dynamic environments using subsumption architecture</b>
<b>ORGANIZERS</b>	Student Leadership Council and Faculty of ACIT Institute and TECHLAV Center
<b>AREA</b>	Formation Control/ROS
<b>SPEAKER</b>	Prasanna Kolar, Graduate Student at ECE Dept., University of Texas at San Antonio
<b>DATE</b>	Friday 2nd September 2016
<b>TIME</b>	3:00 – 4:00 P.M. (EDT)
<b>VENUE</b>	Fort IRC 410, North Carolina A&T State University, UTSA and SIPI will be joining through video-conferencing
<b>FEES</b>	No Charge

## SYNOPSIS

The area of aerial robotics remains a challenging research topic due to its growing complexity. There are two main components in the successful completion of tasks; task planning and task execution. This research focuses on implementing a decentralized task planning algorithm called Consensus Based Bundled Algorithm (CBBA) integrated with a behavior based task execution architecture called Subsumption Architecture (SA), to exploit the features of both of these architectures. Benefits of a Consensus Based task allocation system and sensor input based system are exploited in this research to create an architecture for a swarm of aerial autonomous systems that can execute tasks in unknown territories, using input from its sensors. This research can be extended to an autonomous heterogeneous architecture based on ROS and is particularly useful in areas like Autonomous Reconnaissance, Search and Rescue, using drones in unknown or partially known environments.

## ABOUT THE SPEAKER



Prasanna has a Master's degree in Computer Engineering and is currently working towards his PhD in Electrical Engineering with a focus in Controls at the University of Texas at San Antonio. He completed his Undergraduate degree in Computer Science from Madurai Kamaraj University, India with a concentration in computer applications. He joined the Autonomous Control Engineering (ACE) Lab after his second semester at UTSA. His research interests are in areas related to Autonomous Systems, Brain computer interface, machine learning and cloud computing. Email:Prasanna.utsa@gmail.com