

Field Robotics Center Seminar Series

Tuesday, Mar 22, 2011 GHC 2109 11am - noon

Pizza will be served



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Environmental Hybrid Robot – a mobile amphibious system developed to operate in the Amazon Rain Forest

Abstract

The Environmental Hybrid Robot is being designed by the Brazilian Oil Company Petrobras S.A. for monitoring missions in the Amazon rain forest region close to the Coari–Manaus pipeline. An innovative locomotion system was developed according to the conditions encountered in the Amazon. The wheel-legged architecture is adopted. Aiming to enable the robot to float in the water, the wheels have large volume and are made of low-density material. Each wheel is coupled to an independent suspension system, also referred to as legs. This system is able to collect data and samples and perform tasks in difficult-access areas of the forest. The robot is designed to overcome certain obstacles and to operate in different terrains, as water surface, land, marshes, swamps, and sand.

Speaker Bio

Gustavo Freitas is a control and automation engineer, formed at the Federal University of Santa Catarina (UFSC) – Brazil, in 2005. He acquired his Masters and now he is pursuing his Ph.D at the Federal University of Rio de Janeiro (UFRJ). During this time, he has worked in different projects, including: implementation of a multi-axis foot force sensor for the six leg robot Tarryllb, at the University of Bielefeld, Germany; software development for the Roboturb, an autonomous system capable of recovering hydraulic turbine surfaces, at UFSC; concept of mechanical parts, electrical installation and development of kinematic reconfigurability control strategies for the Environmental Hybrid Robot from the Brazilian Oil Company Petrobras S.A.



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