POST-DOCTORAL POSITION IN VERIFICATION AND CONTROL OF HYBRID AND EMBEDDED SYSTEMS

Del Vecchio’s Group

Department of Mechanical Engineering

MIT (LIDS)

A post-doctoral position is available in the Department of Mechanical Engineering (LIDS) at MIT in Prof. Del Vecchio’s group in the broad area of verification and control of hybrid and embedded systems. The project deals with systems with imperfect information in which the (hybrid) state of the system is not available to the controller and needs to be estimated. The project is motivated by and addresses a number of engineering applications, including driver-assist systems that warn and override drivers to prevent crashes at traffic intersections, collision prevention/mitigation in complex traffic networks, obstacle avoidance for helicopters navigating in a city, and verification of automatic cruise control with stop and go functions (in collaboration with automotive companies). Possible theoretical problems to investigate include employing partial order theory and job scheduling techniques to improve the computational efficiency of algorithms for control and estimation, developing theoretical results for safety control of hybrid systems with hidden modes, and developing discrete abstractions that leverage the structure of the systems under study.

Qualifications: A PhD in control theory and dynamical systems or closely related fields

Start Date: September 2012

Submission instructions: Interested individuals should submit their CV, names of three references, and availability via e-mail to Domitilla Del Vecchio ddv@mit.edu.