Tecnológico de Monterrey

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Undergraduate Research Program

Project Name	Optimal regenerative braking in hybrid and electric vehicles
Campus & Location in Mexico	Monterrey
Faculty	Engineering
Research Area	Automotive Consortium for Cyber-Physical Systems
Research Responsible	Riccardo Cespi
Description of the Project	We count with the CarSim simulator able to provide both braking actions: disk pads and electric motor torques. The idea is to select which action is needed depending on the state of charge of the super capacitor situated before the battery pack. Combined trategies will be manipulated by using Fuzzy logic control in order to mantain the Super Capacitor as full as possible.
Training Provided	Elaboration / execution of projects;Preparation of specialized papers;Scientific-based problem solving
Modality	Virtual
Offered During	Semester

Student

Tasks/Responsibilities	The student uses CarSim in order to identify and isolate the two braking actions: by using electric motors torques or dissipating with disk and pads. The two actions will be later used in Fuzzy control logic given by the professor.
Required Language Proficiency	Spanish (Medium);Spanish (Advanced);English (Medium);English (Advanced)
Required Skills and Abilities	CarSim Matlab Simulink
Other Documents Required to APPLY for an Internship	1) Being at least in your 2nd year of bachelor 2) Accumulative grade point average (GPA) 2.5 3) Official Transcript 4) 2 letters of recommendation of faculty members 5) Resume 6) Letter of intention explaining the reason why you would like to participate in the research program