Undergraduate Research Program

Project Name	Machine and deep learning for gravitational waves search and characterization
Campus & Location in Mexico	Guadalajara
Faculty	Engineering and Science
Research Area	Computational Physics, Computer Science
Research Responsible	Javier M. Antelis
Description of the Project	Development of computational methods for the search, detection and parameter estimation of GW transients using freely available strain data from the LIGO-VIRGO observatories.
Training Provided	Data analysis - Time, frequency, and time-frequency domain analysis of digital signals. - Feature extraction, machine learning, deep learning, - Use and implementation of machine and deep learning models (emphasis in spatial filters). - Offereed during summer, winter and semester

Offered during:

SUMMER	X	WINTER		SEMESTER	X

Student

Tasks/Responsibilities	To analize strain recordings freely available -@ To develop code in Matlab and/@or Python
Required Language Proficiency	Basic comunicacion skills in Spanish, English 90%
Required Skills and Abilities	Basics of Data analysis -@ Basis of digital signal processing (e.g., Fourier analysis) -@ Basis of machine learning -@ Basics of Matlab/@Python -@ Fast learner
Other Documents	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