**Faculty Name:**  
Carlos Paz-Soldan

**Faculty Email:**  
carlos.pazsoldan@columbia.edu

**Lab:**  
Columbia Plasma Physics Laboratory

**Project Title:**  
Predicting the Tokamak Edge with Machine Learning

**Description:**  
The development of predictive models for plasma profiles in fusion energy systems is essential for accurate device planning and design. In this project, we will develop a neural net with this purpose in mind by analyzing and training on a large set of existing data from the DIII-D Tokamak in San Diego. The model will be tested on selected datasets from DIII-D and other machines around the world and should be able to accurately predict the width and height of the plasma pressure pedestal from generalized inputs. Applicants should have a strong coding background, preferably in python. Students will also generally assist with other Columbia Plasma Physics Lab initiatives. More information can be found at https://plasma.apam.columbia.edu

**This position and others in Prof Paz-Soldan’s group have a common application**

**Please apply using the form https://forms.gle/viSUdEneLy66vFaZ6. Do NOT email the PI**

**Flexibility in project choice is welcome**

**Location of Research:**  
On Site

**# of hrs/week:**  
40

**Department/Program:**  
Applied Physics and Applied Mathematics

**Eligibility:**  
BS, First Year, BS, Second Year, BS, Third Year

**To apply, please contact:**  
Carlos Paz-Soldan  
carlos.pazsoldan@columbia.edu