It seems we are going to space!

Marcos Bruno is a 2018 *Friends of Fulbright Argentina* alumna and a member of the winning "TIAB" team at this Open Space Competition. The Open Space competition, held by "Academia Exponencial" and "Satellogic", has the mission to let students from Argentina under 25 years old to have the opportunity to design a space experiment and send it to space abord a Satellogic satellite.

Their project, *Universitwin*, consisted of the development of a Digital Twin platform along with a worldwide space education program, which aims to democratize access to space and break three barriers often seen when developing space missions:

1) High costs related to the development of a space mission
2) High risks of failure since almost half of all small satellite missions result in partial and total failure
3) The inherent complexity of a satellite mission arising from handling large datasets, working in a hostile environment and a very limited timeframe, in addition to the pressure to succeed since there is only one chance to avoid failure once satellites are sent to space.

How did their team seek to solve these challenges?

The team aims to develop a Digital Twin and educate those who want to venture into a space project.

The Digital Twin is a virtual image of a real-world system or set of models that are synchronized and coordinated by a master algorithm that describes the current and future state of a real physical system, which is complemented by a dashboard that shows variables of interest to the platform users. The Digital Twin allows users to save time and money on simulations, testing, and prototype development and helps increase project reliability and save trial and errors steps. Collectively these serve to undertake some of the barriers seen when developing space missions by decreasing cost, lowering the risk of failure, easing the complexity of working in a space project and encouraging the increase of diversity in the space industry. Ultimately, the Digital Twins will prevent failure and help decrease cost and allow more people to be involved in the space industry.

The second objective of the project is to educate and train anyone who would like to venture in space projects, as there is an increased interest in young people who are interested in space revolution projects. The team will be accomplished by proving face-to-face workshops in Argentina as well as virtual workshops that would be accessible to anyone in the world. Educating those who are interested about space -- whether it is to know about space or to develop a space mission-- will help bridge the gap that exists between the general public and those who work for the space sector, and thus democratize the access to it.

What are some takeaways from this work?

Universitwin is a project for students by students that displays how crucial it is to work in a team with diverse members (13 members from different parts of Argentina) who are passionate about science. Moreover, Universitwin is the paradigm of a project that inspires the future generation of scientists to gain interest in space and satellites and accomplish something that seems unimaginable. Because of this unique opportunity, Universitwin can be part of the global trend to democratize access to space and increase access to the space industry.