Study Objectives

As a statistician, I had the fortune to work in different countries using data and technology to provide solutions to end poverty and drive inclusion. In one opportunity, I aimed to assist Syrian refugees by delivering a programming course for them to acquire tech skills, useful for their limited employment opportunities while migrating. Despite having the best intentions, when I arrived at the refugee camps I realized that data and technology were not enough to help them, that I first had to understand their difficulties for my course to be successful. After tailoring its content to attend to their urgent needs, I was able to succeed in helping them when finding jobs as refugees.

This experience showed me how critical it is to properly grasp the complexities of the problem being addressed before attempting a solution. I continued working towards the goal of fighting poverty, starting with measuring and estimating. I predicted income in Buenos Aires through open data and elaborated a map to show low-income areas, which revealed the contrasting juxtaposition of the least and most powerful. For example, the biggest slum of Buenos Aires, Villa 35, is a 15-minute walking distance to the former president Kirchner's apartment. People living in the slums, just as I did, understand that being close to the powerful is only a geographical coincidence since these areas are far from being taken into account in any decision making from the government. To provide solutions for the most vulnerable population, it is fundamental to measure and identify their needs, starting by geographically mapping their location. Once this step is secured, it is possible to develop a thoroughgoing program to enhance the opportunities for those in need.

My interest in geographic information systems (GIS) evolved when I joined the United Nations (UN) as a consultant, using satellite images for climate change research. In the UN I also learned the blueprint of goal identification, measuring, and achieving: the Sustainable Development Goals (SDGs). Among the SDGs' goals, the most crucial objective is to reduce poverty, an intricate one since the poorer the country, the less economic data they have. For example, in Latin America, economic indicators for the entire population are drawn from censuses carried once every ten years at best. Survey data is costly and scarce, and the developing world is eager to use alternate sources to obtain key economic measures. Moreover, in Argentina, the poverty index has been a controversial one, and many organizations like universities, the Senate, and the National Bureau of

Statistics have estimates that differ in more than five percentage points. Alternate measures of poverty not only address the issue of its cost and availability but also provide an opportunity to build unbiased and reliable information.

To be at the forefront of projects that aim to measure poverty in Argentina, I intend to join the Master's to be prepared for the challenge of estimating income from alternative sources. I am positive that satellite imagery represents a robust and sustainable source of information for poverty estimation, and this program will help me develop skills in the tools of computational science that are needed when working with satellites' massive data. Remote sensors' information is ubiquitous and inexpensive, and it has been used in the past to identify buildings, roads, and natural resources. From that input, income can be predicted with deep learning algorithms through transfer learning, in which a proxy for poverty is used to train a deep learning model, that then estimates income at a granular level.

My long term life mission is to contribute to assuring social and economic conditions that allow people to live with basic human rights and pursue their own goals, which often relies on governments' capacity to provide services and aid in vulnerable populations. I am confident that using alternate sources to estimate poverty is the first step into its solution. Upon completion of my degree, I plan to return to Argentina and work with the government and existing organizations to use this robust estimation method for poverty.