In disaster scenarios, whether natural (such as floods, earthquakes, or solar storms) or man-made (like warfare or infrastructure failure), maintaining reliable communication channels is crucial for civilian safety. For example, during an earthquake or a flood, uninterrupted communication aids first responders in delivering essential services and enables civilians to communicate with emergency services. Modern urban infrastructure also heavily relies on wireless connectivity for various services such as transportation, education, and remote businesses. Therefore, providing ad-hoc communication solutions can preserve the operation of such systems during disruptions. Another important scenario involves an aggressor disrupting urban connectivity, thereby isolating inhabitants and increasing the risk of breaching international laws and committing war crimes. In recent years, base stations mounted on Unmanned Aerial Vehicles (UAVs), also known as drone base stations (DBSs), have gained popularity and received extensive research in the telecommunications community. They enable ad-hoc wireless networks in disaster scenarios and act as small cells working heterogeneously with terrestrial base stations to improve network performance. Furthermore, these stations can serve as relays, providing backhaul connectivity between cells or point-to-point relaying between ground nodes. This project targets the deployment of DBSs in urban areas to provide wireless connectivity. Compared to satellite stations, a set of DBSs deployed as small cells in a city can offer increased data rates and reduced latency. Additionally, they are easier to deploy and can dynamically adapt their locations based on ground needs. However, deploying DBSs presents complex challenges in addition to those commonly faced by terrestrial counterparts. Besides issues related to frequency-time resource allocation, load balancing, and power control, DBS mobility is a new control factor that must be optimized, taking into consideration the previous aspects along with user data (e.g., location, QoS metrics). Also, networks with DBSs face more interference due to increased line-of-sight (LOS) visibility when deployed at high altitudes. Moreover, their backhaul traffic is typically delivered to terrestrial or satellite nodes through a wireless mesh network that leverages radio frequency, millimeter-wave (mmWave), or free-space optical (FSO) channels. Finally, and most importantly, their energy and working time are limited, presenting further constraints to their deployment. Combining all these aspects presents an exceptionally complex problem, which traditional optimization techniques cannot solve, necessitating the use of advanced machine learning algorithms. Most existing literature targets a subset of these factors (e.g., ignoring backhaul or energy constraints). This project aims to develop machine learning solutions that provide a holistic approach to deploying DBSs in real urban environments with the aid of maps. Specifically, the goal is to design deep learning algorithms to determine the placement of DBSs, their fronthaul resource control, and backhaul connections, considering their energy consumption, user data and metrics, load, and the topology of urban obstacles affecting both fronthaul and backhaul channel characteristics. The hypothesis is therefore that **deep learning algorithms in combination with urban maps can be effectively used to tackle the problem of DBSs deployment by finding a comprehensive solution that considers all the aspects of this complex problem**. The successful completion of the project would result in a framework which enables the deployment of DBSs in cities.