**Project topic:** The Smart Green Urban Avenue (SGUA)

**Project team:**

**Mounira TLILI :** Assistant professor in Computer Science, Higher Institute of Transport and Logistics (ISTLS), Sousse, Tunisia

MARS Research Lab, LR17ES05, Higher Institute of Computer Science and Communication Technologies (ISITcom), University of Sousse, Tunisia

**Saida HAMMAMI :** Assistant professor in Landscape Design, Higher Agronomic Institute of Chott Mariem, Sousse, Tunisia

Agrobiodivesity and Ecotoxicology Research Lab, LR21AGRO2, University of Sousse, Tunisia

**Rim OUACHANI :** Assistant professor in Civil Engineering, Higher Institute of Transport and Logistics (ISTLS), Sousse, Tunisia

Research Lab, Laboratory of Modeling in Hydraulics an Environment, LR99ES35, University of Tunis El Manar, Tunisia

**Context:** Habib Bourguiba Avenue is an emblematic thoroughfare that plays a fundamental role in urban life. The transformation of this avenue into a “Smart and Green Avenue” aims to implement intelligent technologies to improve citizens’ life quality while reducing environmental impacts.

**Overall objective: Sustainable** Smart Avenue with environmental, social, and economic impact.

This project aims to create green public spaces resilient to climate change by smart managing renewable energy in an urban context. This is made by using intelligent technologies and computational intelligence that take into account nature and contemporary design.

**Specific objectives:**

* Manage natural resources (solar/water/vegetable) in the best way using ecological solutions.
* Controlling and saving electricity and energy..
* Reduce emissions and heat islands to attempt the **urban climate neutrality**
* Make the avenue more agreeable, attractive and convivial.
* Create public spaces to strengthen social cohesion.
* Develop solutions directed towards congestion management and sustainable mobility

**Expected results:**

* Well-managed natural resources (solar/rain/vegetation) through the following integrated equipments:
* Development of intelligent sunshades
* Implementation of an automatic irrigation system
* Creation of green infrastructure through interconnected public green spaces
* Rain reuse management
* Efficient use of electricity and wastewater
* Automation and control of electricity
* Intelligent Energy optimization
* Use of wastewater in energy production
* Reducing pollution and creating refresh islands
* Reduction of greenhouse gas emissions (use of green carbon)
* Increase in planting area (reduce noise and air pollution)
* An agreeable avenue
* Improve the living environment for citizens through landscaping
* Modern design appropriate to the urban context (architecture, society, and culture)
* Guarantee aesthetics and harmony between the different components of the avenue
* Public spaces that encourage exchanges and meetings between citizens

These results aimed in creating an innovative and agreeable public space, where the proposed components (smart parasols, planter benches, lampposts, fountains, etc.) contribute to a smart, green, convivial, ecological, and sustainable environment that can be resumed in urban happiness.