**Epics:**

1. Research & Learning
2. Drone Assembly & calibration
3. Flight Planning & Sensor Handling
4. Data Visualization
5. Web Interface to store flight history and maps

**User Stories:**

1. **Research & Learning**
   1. As a user, I want to have the prerequisite knowledge to develop this system.
   2. As a user, I want to have the software knowledge required to understand how this system will handle data.
   3. As a user, I want to be sure that my project is novel enough to justify its creation.
2. **Drone Assembly & calibration**
   1. As a user, I want to be able to use my drone which is consistent of multiple consumer-grade parts.
   2. As a user, I want to be able to obtain accurate data using my drone’s flight with well-calibrated flight controls, sensors, and user controls.
   3. As a user, I want to be able to control my drone with a high level of accuracy to ensure hardware retention and safety.
3. **Flight Planning & Sensor Handling**
   1. As a user, I want to be able to generate a flight path from the ground station for the drone to follow.
   2. As a user, I want to be able to get updates on my drone’s position using GPS.
   3. As a user, I want my drone to be able to record a point cloud and IR Camera footage to later be processed into a coherent map.
4. **Data Visualization**
   1. As a user, I want to be able to fuse my IR footage and LiDAR point cloud into a viewable 3D map.
   2. As a user, I want to be able to see humans marked in the 3D map generated by my ground control station.
   3. As a user, I want to be able to see paths from my ground control station to the humans marked in the 3D map.
5. **Web Interface to store flight history and maps**
   1. As a user, I want to be able to view the previous flights completed by my Drone using a locally hosted web interface.
   2. As a user, I want to have reliable access to the maps and paths generated by previous flights of my Drone through the locally hosted web interface.