SOLUTION OFFERED

Drone detection is one of the major problems faced by defence personnel especially during night times at border areas or military bases is a quite challenging area. Traditional methods of drone detection such as radar or visual observation, can be limited in their accuracy and range. We are proposing a robust technique to detect drones using infrared cameras with image analysis and quantum machine learning techniques.

Infrared images can be trained to detect drones using various characteristics, such as their shape, motion and trajectory. By analysing high-resolution infrared images and detecting small or fast-moving objects, like drones, defence forces can quickly and accurately identify potential threats.

Additionally, the use of quantum algorithms can enhance the speed and accuracy of the drone detection process. Quantum algorithms can process large amounts of data in parallel, enabling faster and more accurate analysis of high-resolution images. By leveraging the unique properties of quantum computing, quantum algorithms can provide better-informed decisions in real-time scenarios. Quantum algorithms, such as the Quantum Fourier Transform (QFT), can process large amounts of data in parallel and analyse the spectral characteristics of the infrared images. This enables the image to be divided into different segments based on these characteristics, allowing for more efficient analysis and easier identification of objects of interest.

Image processing techniques with the help of quantum algorithms can provide a powerful tool for detecting and identifying drones of the enemy, enabling defence forces to take appropriate action to mitigate the potential threats. Our proposed solution make use of minimum computational resources thus reducing computation time and optimises the memory space.