

# Implementation of Object Detection on a Highly Energy-Efficient Unmanned Aerial Vehicle

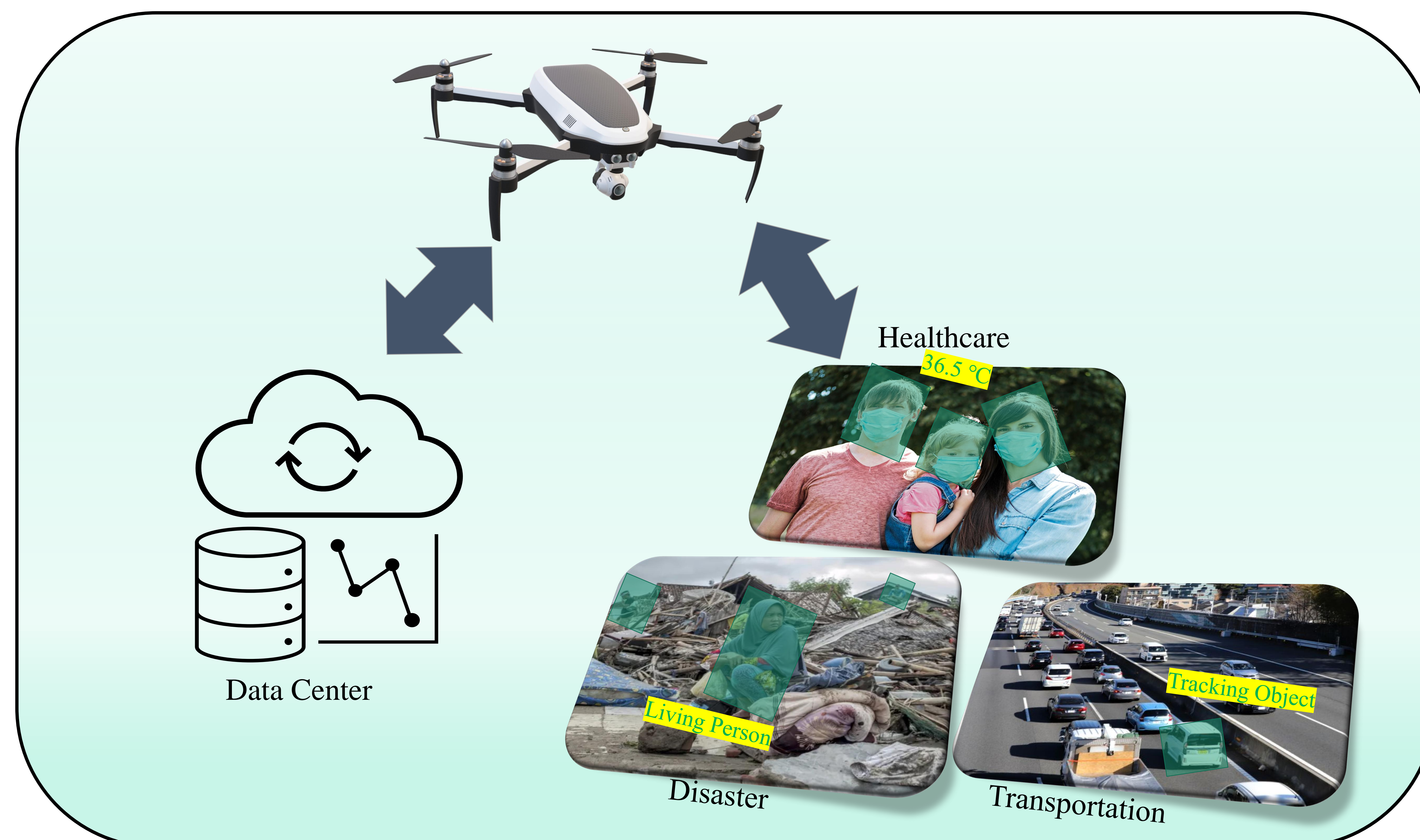
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Advancements in artificial intelligence have significantly broadened the application range of unmanned aerial vehicles (UAVs), from security surveillance to aerial photography. High-precision object detection technology is a key foundation for building highly-civilized IoT society. This course demonstrates how to achieve accurate object detection using low-cost, energy-efficient UAVs by leveraging state-of-the-art deep convolutional neural networks. Specifically, we will explore the principles and challenges of object detection with low-cost, energy-efficient UAVs. Through hands-on experimentation, you will learn foundational knowledge in the following areas:

- Theory of deep convolutional neural networks for object detection
- Fundamental knowledge of Python programming
- Basic principle of UAVs' control

This course offers practical experience and theoretical knowledge, offering students with the skills needed to apply AI-driven UAVs technology across various fields.



Conceptual diagram of UAV-based object detection



UAV-based object detection system