Declaration

List of Abbreviations

- **YOLO**: You Only Look Once

- **mAP**: Mean Average Precision

- **FPS**: Frames Per Second

- **ERAC**: Efficient Receptive Aggregation Convolution

- **CSP**: Cross Stage Partial

- **BiFPN**: Bidirectional Feature Pyramid Network

- **ITS**: Intelligent Transportation Systems

- **CIoU**: Complete Intersection over Union

- **GPU**: Graphics Processing Unit

Ethics Approval and Consent to Participate

Not applicable. This study does not involve human participants, human data, human tissue, animals, or plants.

Consent for Publication

Not applicable. This manuscript does not contain any individual person's data in any form.

Availability of Data and Materials

All datasets used and generated during this study are available publicly on IEEE DataPort at the following DOI:
https://dx.doi.org/10.21227/p03g-ff98
The dataset includes preprocessed VisDrone images, annotations in YOLO format, pretrained models, and scripts for evaluation and deployment.

Competing Interests

The authors declare that they have no competing financial or non-financial interests related to this work.

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Authors' Contributions

Bonala Shanmukesh: Designed the experimental workflow, prepared the dataset, trained and evaluated the models, and wrote the initial draft of the manuscript.
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