Problem & Contributions

Autoregressive flow of pedestrian detection predictions can boost the precision and robustness of detections without impeding efficiency. Our main contributions are:

- Autoregressive framework for pedestrian detection using incremental supervision of increasingly precise labeling policies.
- Lightweight decoder-encoder module to facilitate feature map refinement and message passing between each autoregressive phase.

Method & Comparison

We visualize the prediction maps of each phase using the max foreground scores across all anchors at each location. We use scaled blue to yellow colors, where yellowness indicates high confidence.

Ablation Study

We analyze the prediction disagreements between each phase. We use the green to represent foreground agreement and magenta for suppression between each consecutive phase.

Autoregressive Detection

The de-encoder module consists of top-down and bottom-up pathways with inner-lateral convolution between pathways to produce diversified features, as well as convolutional re-sampling layers ($s$ denotes convolutional stride) $e$ and $d$ for memory-efficient feature generation.