Listening to Noise: Improving Imbalanced Image Classification

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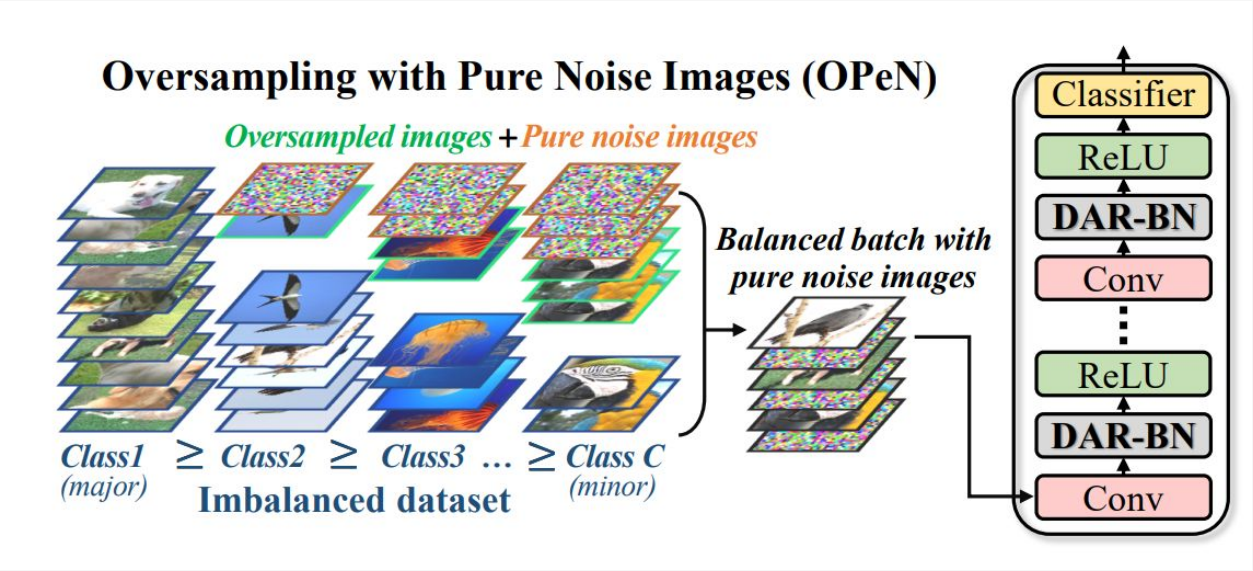
- **Problem:** image classification methods over long-tailed datasets fail to generalize on minor classes

- **Prior approaches:**
  - oversampling minor classes
  - loss re-weighting

- **Task:** implementing the OPeN framework *(Zada et al., ICML, 2022)* and comparing its performance with *SOTA* methods on different LT datasets



Zada et al., 2021, *"Pure Noise to the Rescue of Insufficient Data: Improving Imbalanced Classification by Training on Random Noise Images"*

- **Methods:** Oversampling + DAR-BN *(CNN - ResNet)*

- Compare **OPeN** vs **SOTA** performances for different:
  - *IR (Imbalance-Ratio): ρ = n_max / n_min*
  - *δ: noise rate*

- **Datasets:** long-tailed datasets
  - CIFAR-10/100-LT
  - iNaturalist
- **Benchmark metric:**
  - Top-1 Accuracy
  - Accuracy of minority classes