We present a real-world case where a state-of-the-art deep model collapses under slight input drift, uncovering a deploy
Introduction Modern deep nets often boast near-perfect performance Smith2024,Lee2023, but bridging from lab to proc
Related Work Numerous studies discuss domain shift Ganin2016,Tsai2022, robust training Madry2018, and transfer lea
Problem Setup We train a vision transformer on CIFAR-10 with standard augmentations Krizhevsky2009. In deployme
Experiments [t] [width=0.45]drift$_accuracy.png[width=0.45]feature_shift.png(Left)Accuracyvs. colordriftseverity.(F$
We evaluate three adaptation strategies: (a) naive fine-tuning on a small unlabeled batch via pseudo-labels; (b) batch-n

[t]

Method	In-domain Acc	Deployment Acc
None (baseline)	94.1	72.3
Fine-tune (pseudo)	93.5	82.0
BN-recalib	94.0	83.4
Contrastive pretrain	93.8	86.1

Accuracy under color drift.

Discussion We pinpointed two culprits: (i) collapsed feature-covariances in early layers, (ii) overconfident pseudo-labels
Conclusion Minor real-world shifts can still break today's best models.Our analysis suggests practitioners should monit