SSL paper for the Eurosat dataset from 2022 to 2025

Title: ” Self-Supervised Learning for Invariant Representations from Multi-Spectral and SAR Images”

- **Epochs:** The model was trained for 400 epochs.
- **Batch Size**: The batch size used was 32, with some experiments using 64.
- **Optimizer:** The SGD optimizer was used with a cosine warm restart scheduler.
- **Accuracy:** The model achieved an F1 score of over 0.92 on the EuroSAT classification task and 59.6 mIoU on segmentation tasks, depending on the dataset.
- **Model Used:** The primary model used is RS-BYOL, which is a variant of BYOL specifically designed for remote sensing data
- **Link:** https://arxiv.org/abs/2205.02049

Title: “ Self-Supervised Learning for Scene Classification in Remote Sensing: Current State of the Art and Perspectives”

- **Epochs**: 1000 epochs were used for pre-training.
- **Batch Size**: The batch size was 512
- **Optimizer**: Stochastic Gradient Descent (SGD) with momentum 0.9 was used.
- **Accuracy**:
    - **SimCLR**: 82.55% on Resisc-45 and 92.59% on EuroSAT for linear evaluation.
    - **MoCo-v2**: 85.37% on Resisc-45 and 93.78% on EuroSAT .
    - **BYOL**: 85.13% on Resisc-45 and 94.92% on EuroSAT .
- **Model**: **SimCLR**, **MoCo-v2**, and **BYOL** were employed for this analysis. MoCo-v2 performed best on Resisc-45, while BYOL performed slightly better than SimCLR on EuroSAT
- Link: https://www.mdpi.com/2072-4292/14/16/3995

Title: "Change-Aware Sampling and Contrastive Learning for Satellite Images"

- **Epochs**: 1000 epochs for 100k images, 200 epochs for 1 million images.
- **Batch Size**: 256.
- **Optimizer**: Stochastic Gradient Descent (SGD)
- **Accuracy**: 94.72% with **CACo** (Change-Aware Contrastive) method, based on **MoCo v2**
- **Model Used**: **MoCo v2** with **Change-Aware Contrastive (CACo)** method

- Link: https://openaccess.thecvf.com/content/CVPR2023/papers/Mall_Change-Aware_Sampling_and_Contrastive_Learning_for_Satellite_Images_CVPR_2023_paper.pdf

Title: " Scaling AI with Limited Labeled Data:A Self-Supervised Learning Approach"

- **Epochs**: Trained for several epochs with **10% labeled data** for fine-tuning.
- **Batch Size**: **64**.
- **Optimizer**: **Adam**, **β1 = 0.9**, **β2 = 0.999**, learning rate $\mathbf{1 \times 10^{-4}}$ (reduced by 50% after 50 epochs).
- **Accuracy**: **81.2%** with **10% labeled data**, outperforming supervised by 2.7% and semi-supervised by 2.1%.
- **Models Used**: Combined **contrastive learning** and **masked autoencoding**. **SimCLR**, **MAE**, and **MixMatch** were compared.
- **Link**: https://www.icck.org/article/abs/tetai.2025.607708