Multi-Source Domain Adaptation through Wasserstein Barycenters

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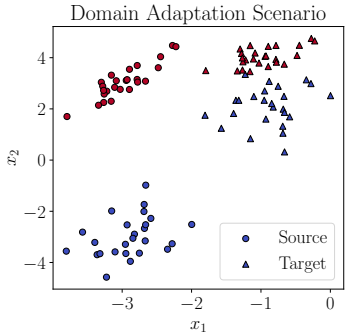
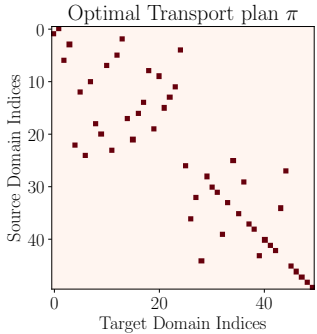
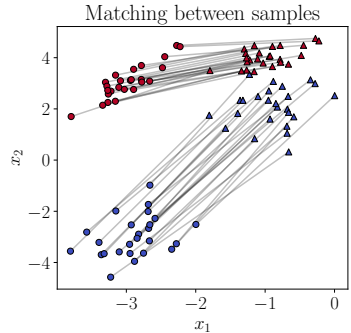
Project page: `https://eddardd.github.io/demo-dadil/`
Paper: `https://arxiv.org/pdf/2307.14953.pdf`

26th European Conference on Artificial Intelligence - October 2023

Domain Adaptation & Optimal Transport

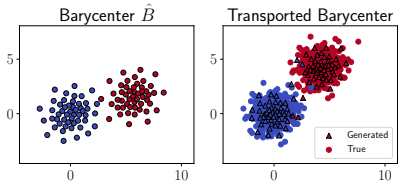


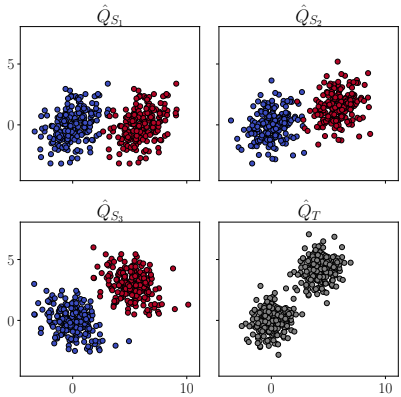




OTDA Framework of (Courty et al., 2017)

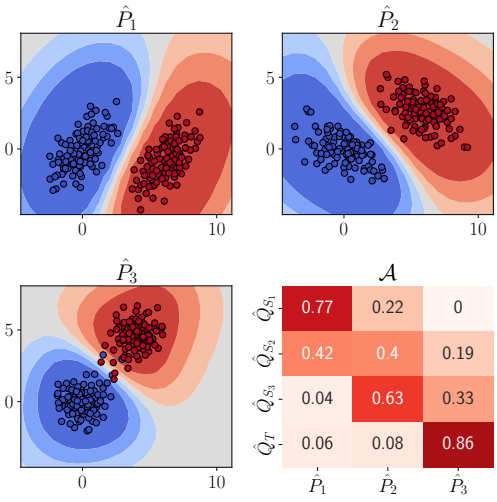
Wasserstein Barycenter Transport

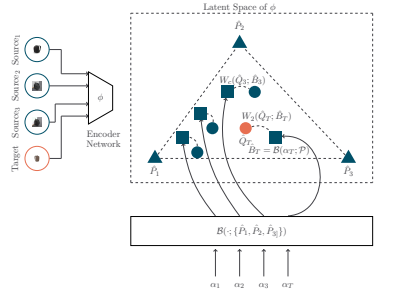


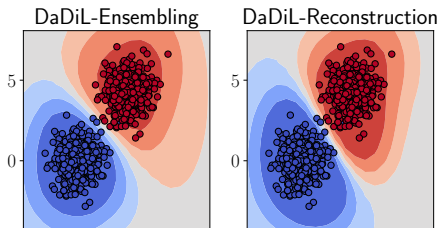


[1] Montesuma & Mboula Wasserstein Barycenter for Multi-Source Domain Adaptation. In Proceedings of the IEEE/CVF CVPR.

Dataset Dictionary Learning







[2] Montesuma, Mboula & Souloumiac Multi-Source Domain Adaptation through Dataset Dictionary Learning in Wasserstein Space. arXiv preprint:2307.14953.

Final Remarks

In summary,

- We leverage Optimal Transport and Wasserstein Barycenters for MSDA,
- Our methods exploit regularities in the distributional shift of domains,

Challenges,

- Curse of dimensionality in OT estimation

Extension works,

- Cross-Domain Fault Diagnosis (Montesuma et al., 2023a)
- Federated Domain Adaptation (Montesuma et al., 2023b)
- Dataset Distillation (Montesuma, Mboula and Souloumiac, 2023c)

Join us on { Monday, 14h00 at Room S2 (Presentation) / Monday, 15h45 (Poster) } for more about DaDiL!