



Unsupervised Feature Learning with Emergent Data-Driven Prototypicality

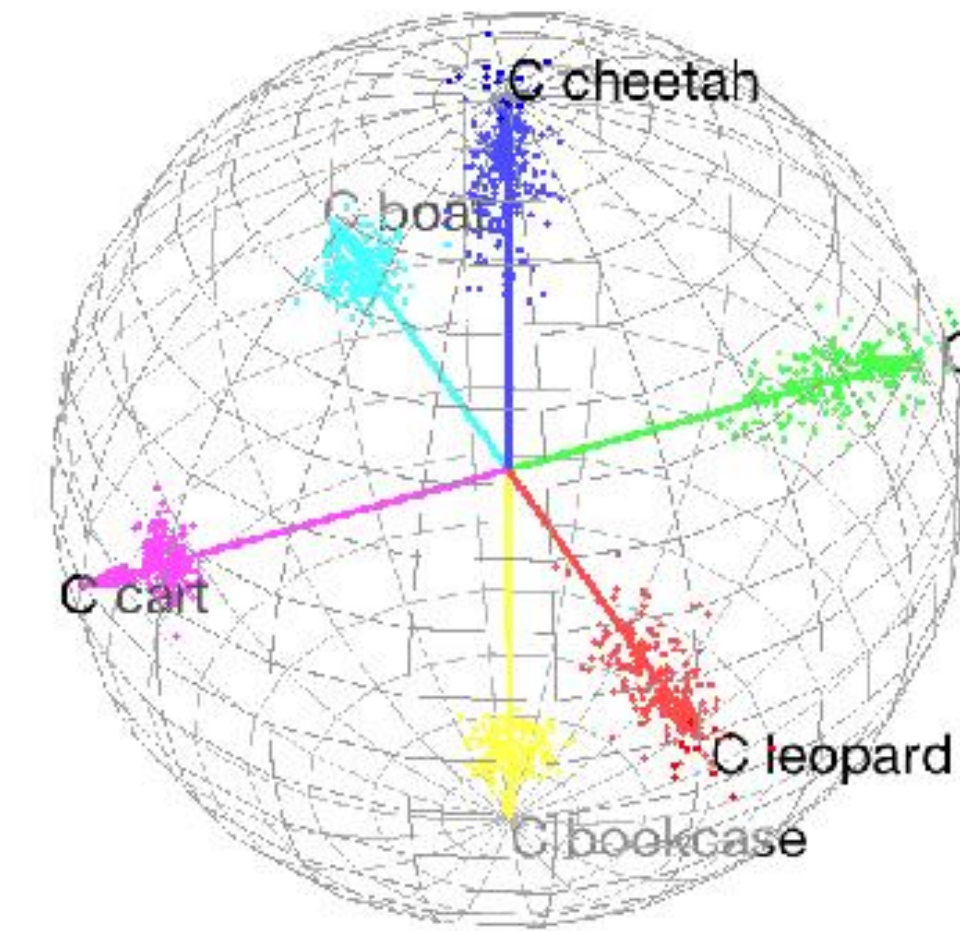
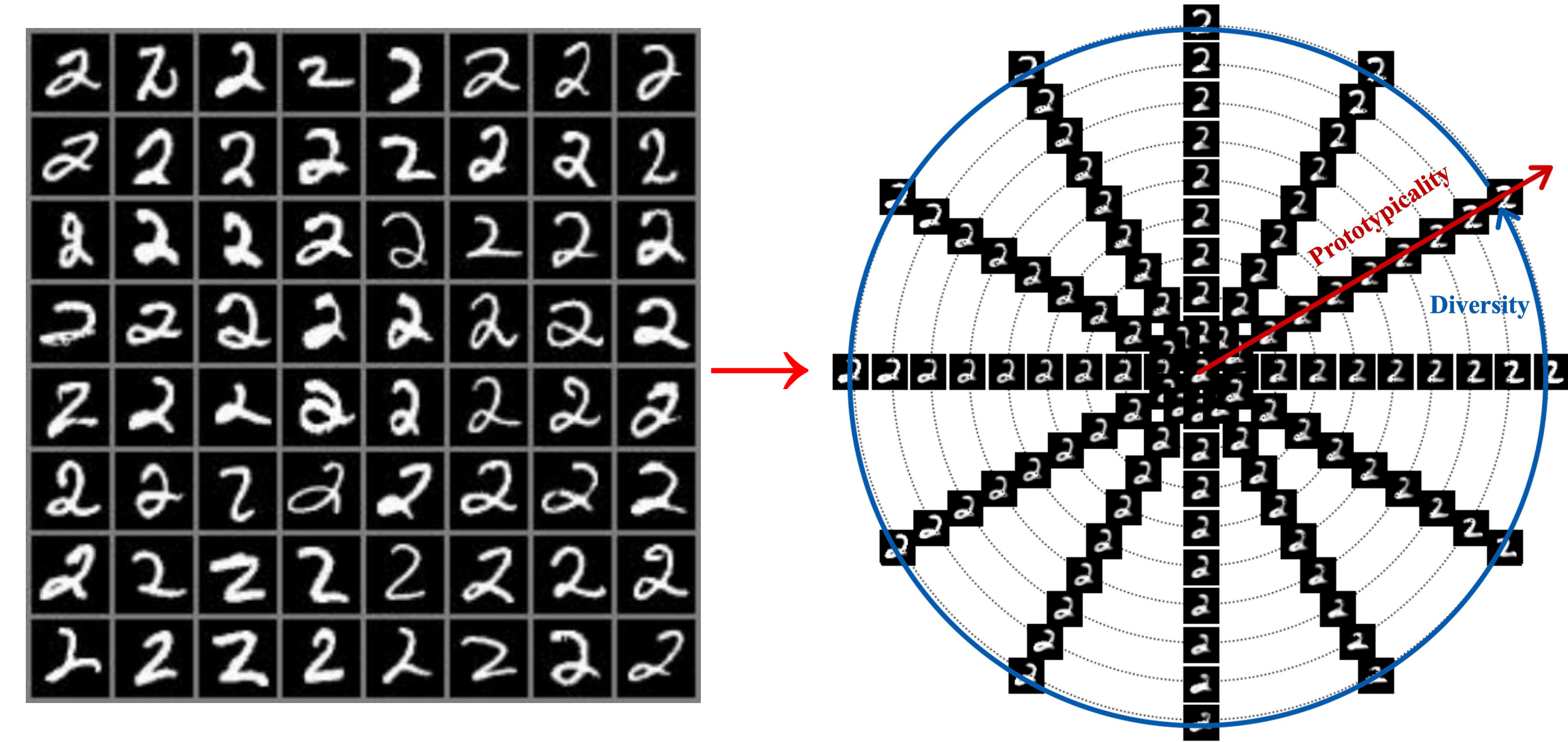


Yunhui Guo

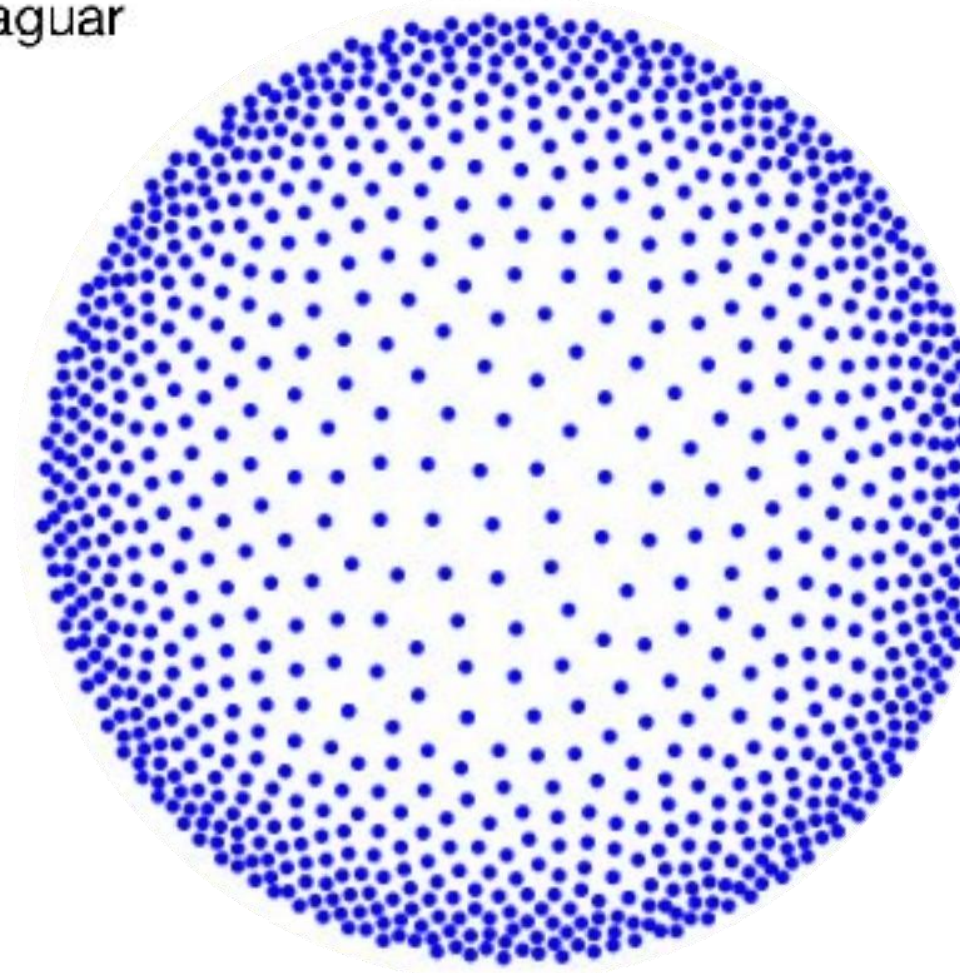
Youren Zhang

Yubei Chen

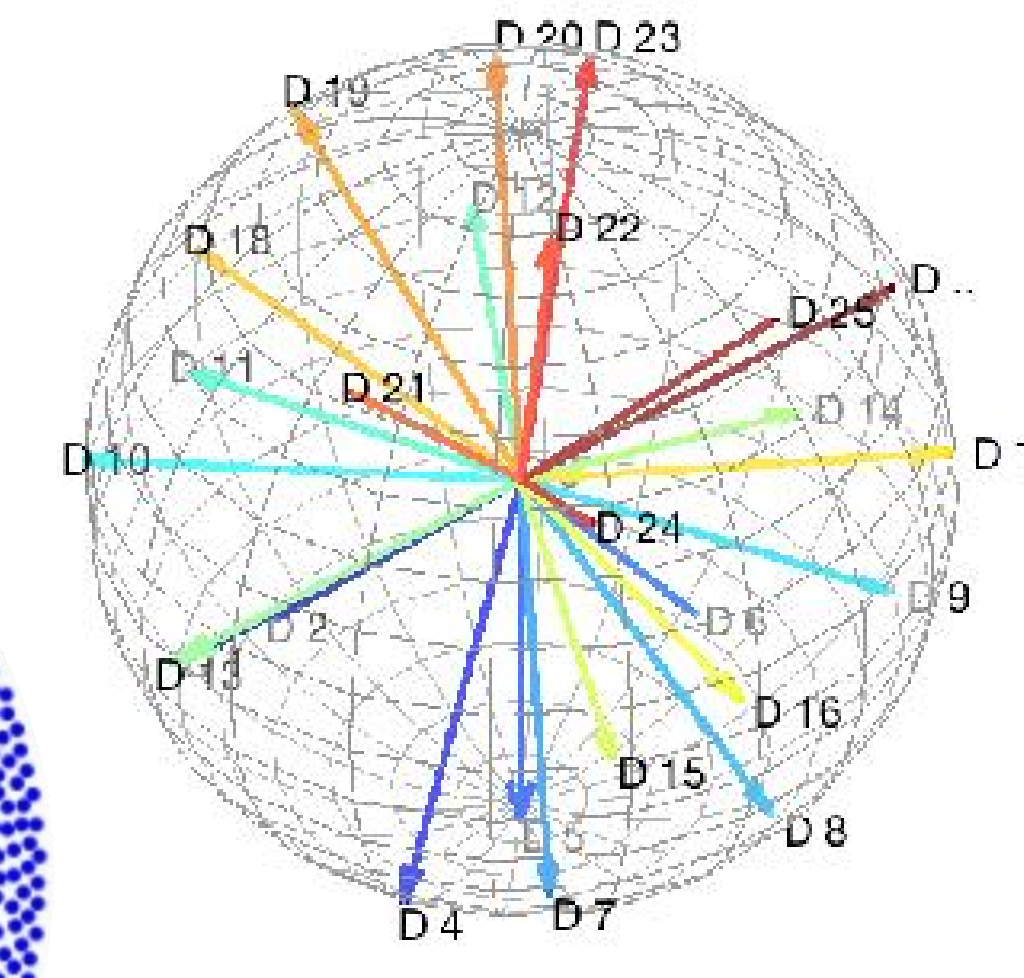
Stella X. Yu



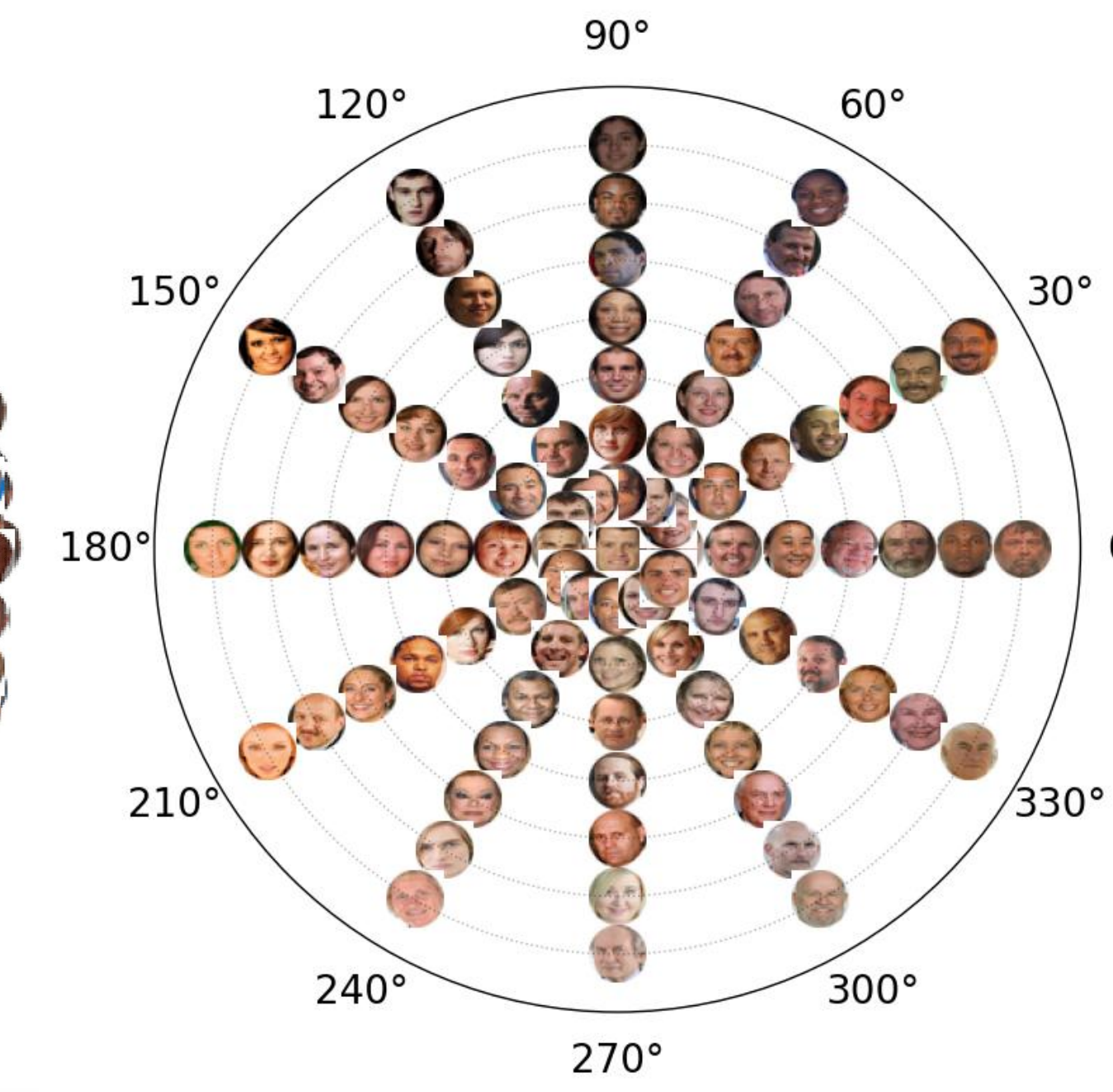
Classification: Known Targets



Our Algorithm: Sphere Packing



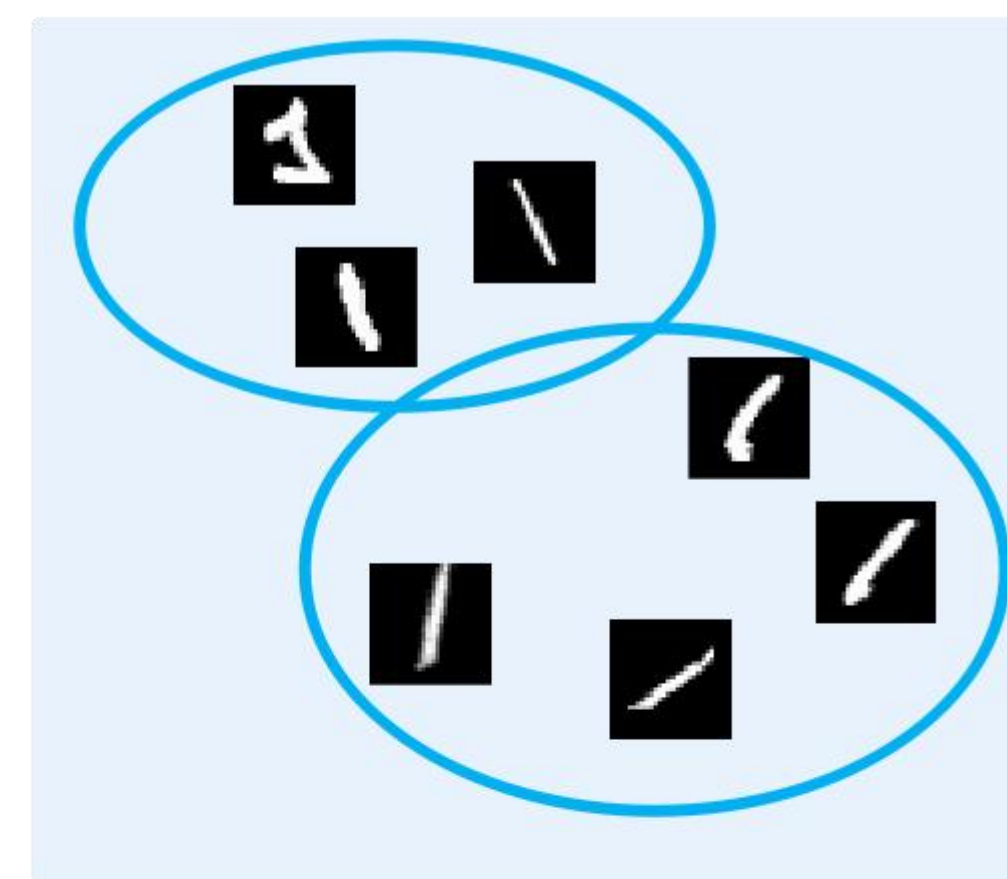
Metric Learning: Unknown Targets



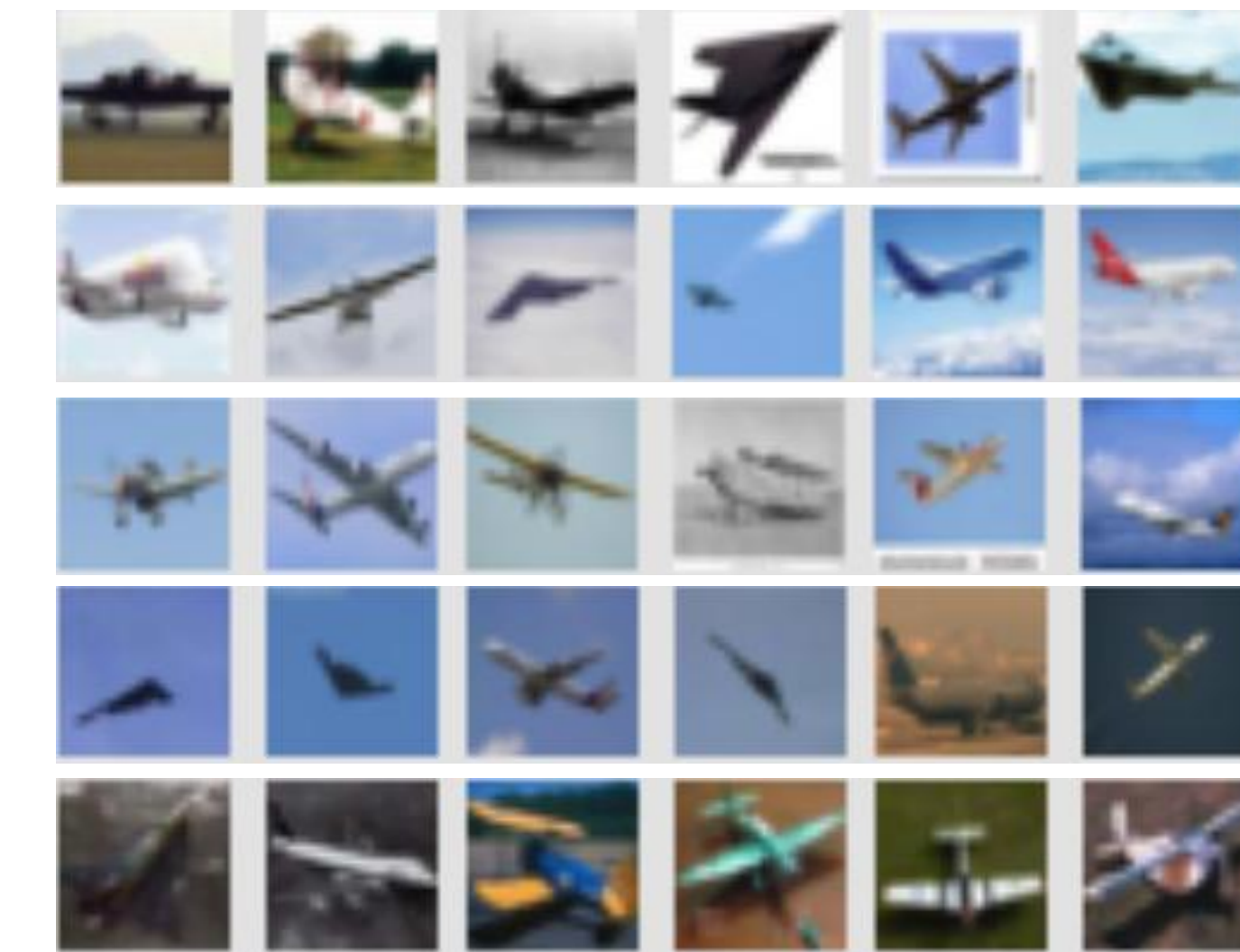
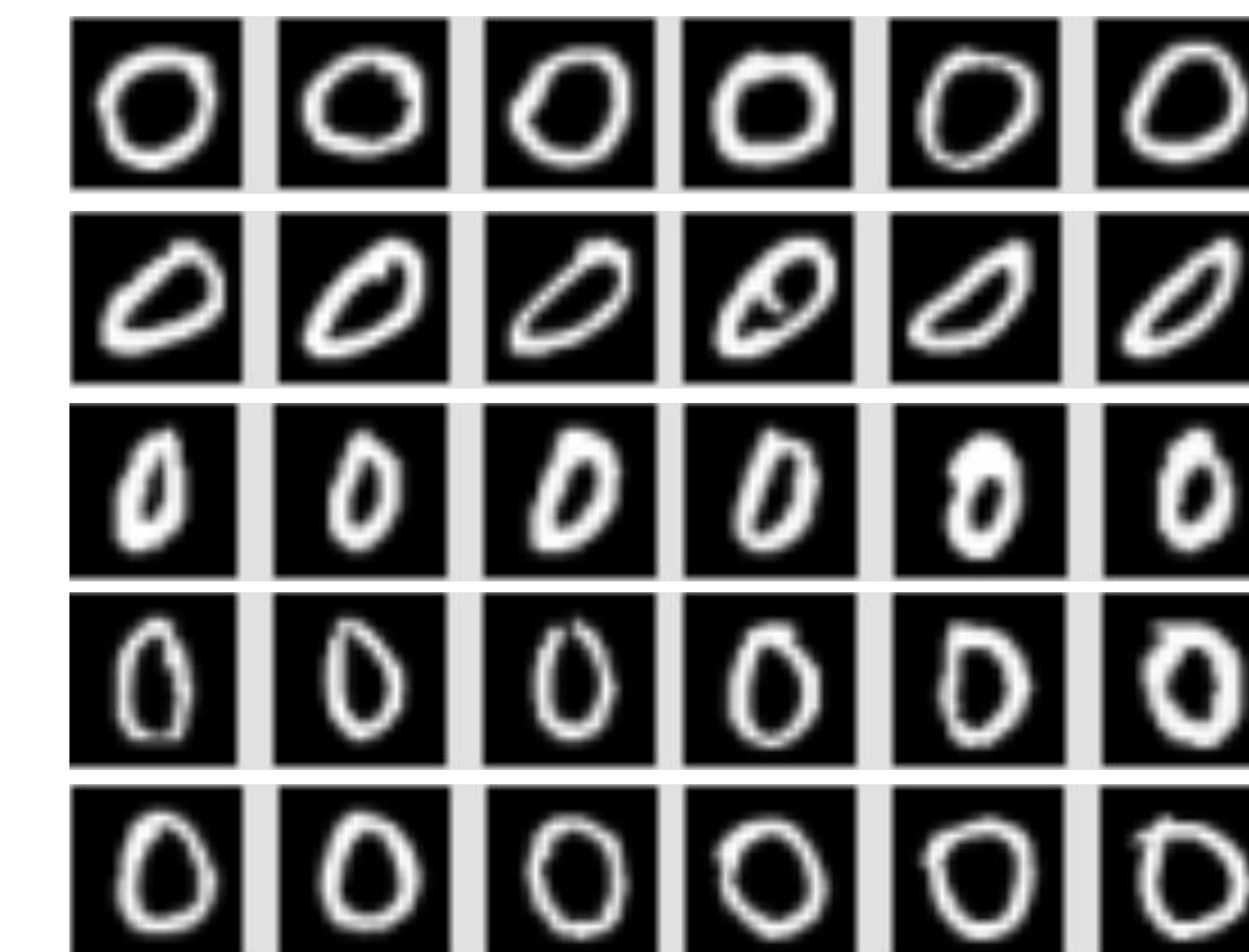
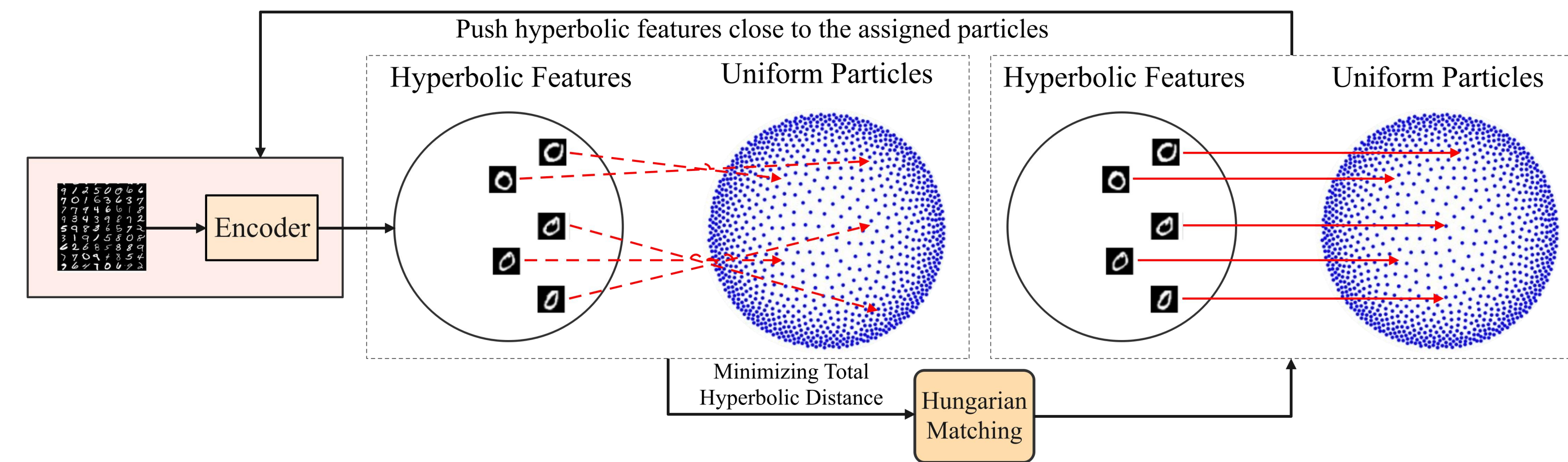
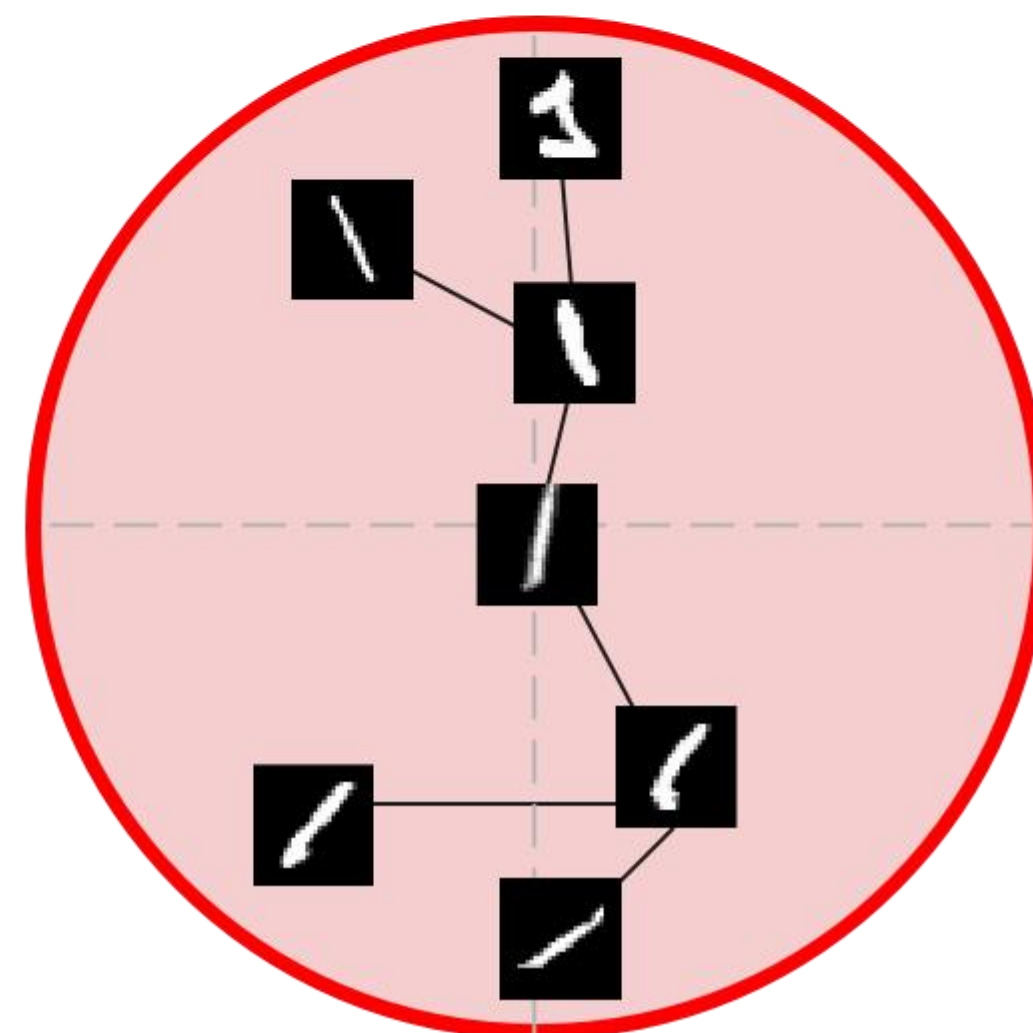
Goal: Feature Proximity = Visual Similarity
 Feature Position = Visual Prototypicality

Solution: Embed Images into Hyperbolic Space
 Typical = Central of the Poincaré Ball

Existing self-supervised feature learning methods



Our unsupervised feature learning method



Sanity Check: Congealed Images More Typical => Central

