

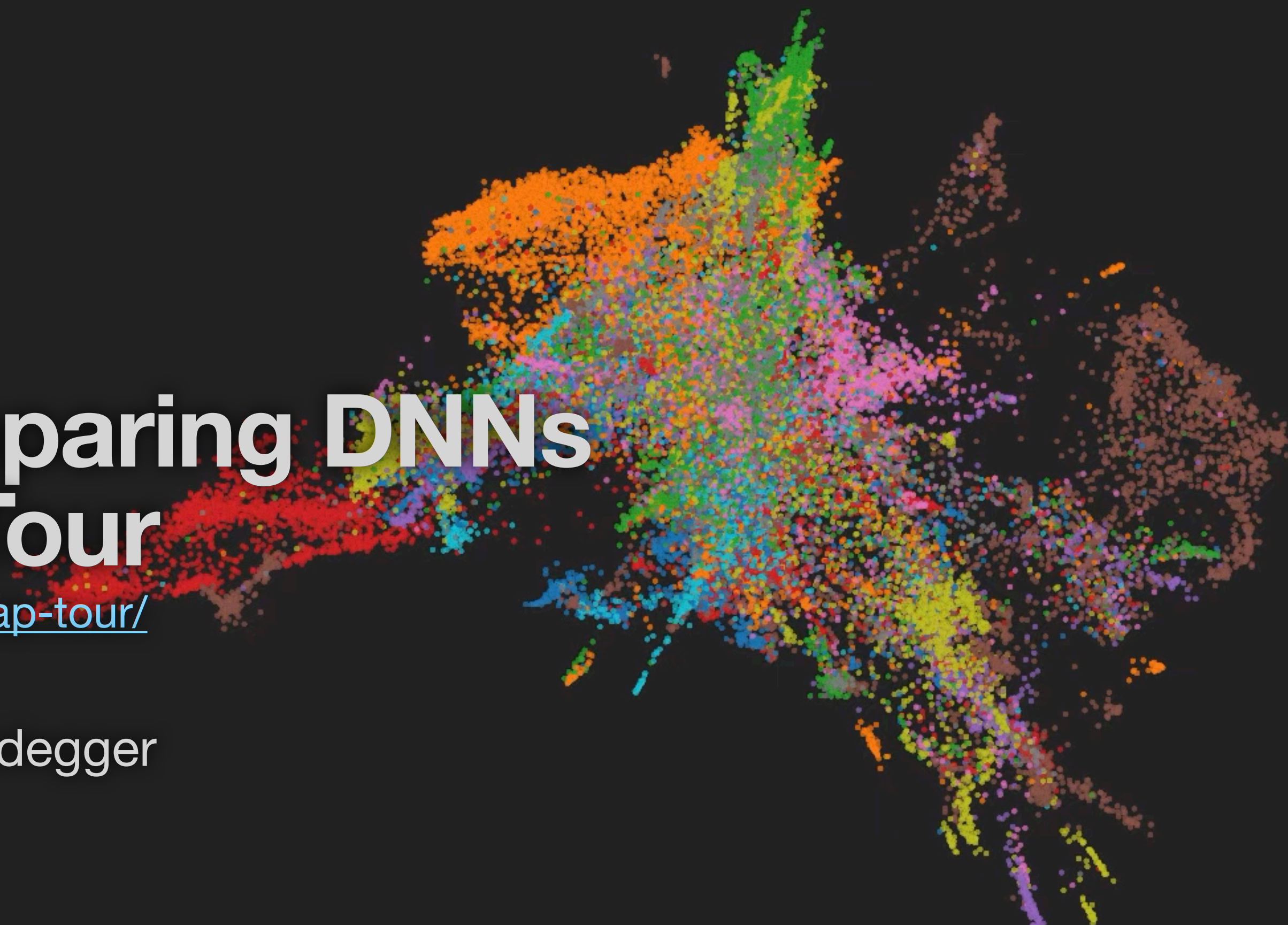


Toward Comparing DNNs with UMAP Tour

<https://tiga1231.github.io/umap-tour/>

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Oct 26, 2020



Toward Comparing DNNs with UMAP Tour

AUTHORS

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AFFILIATIONS

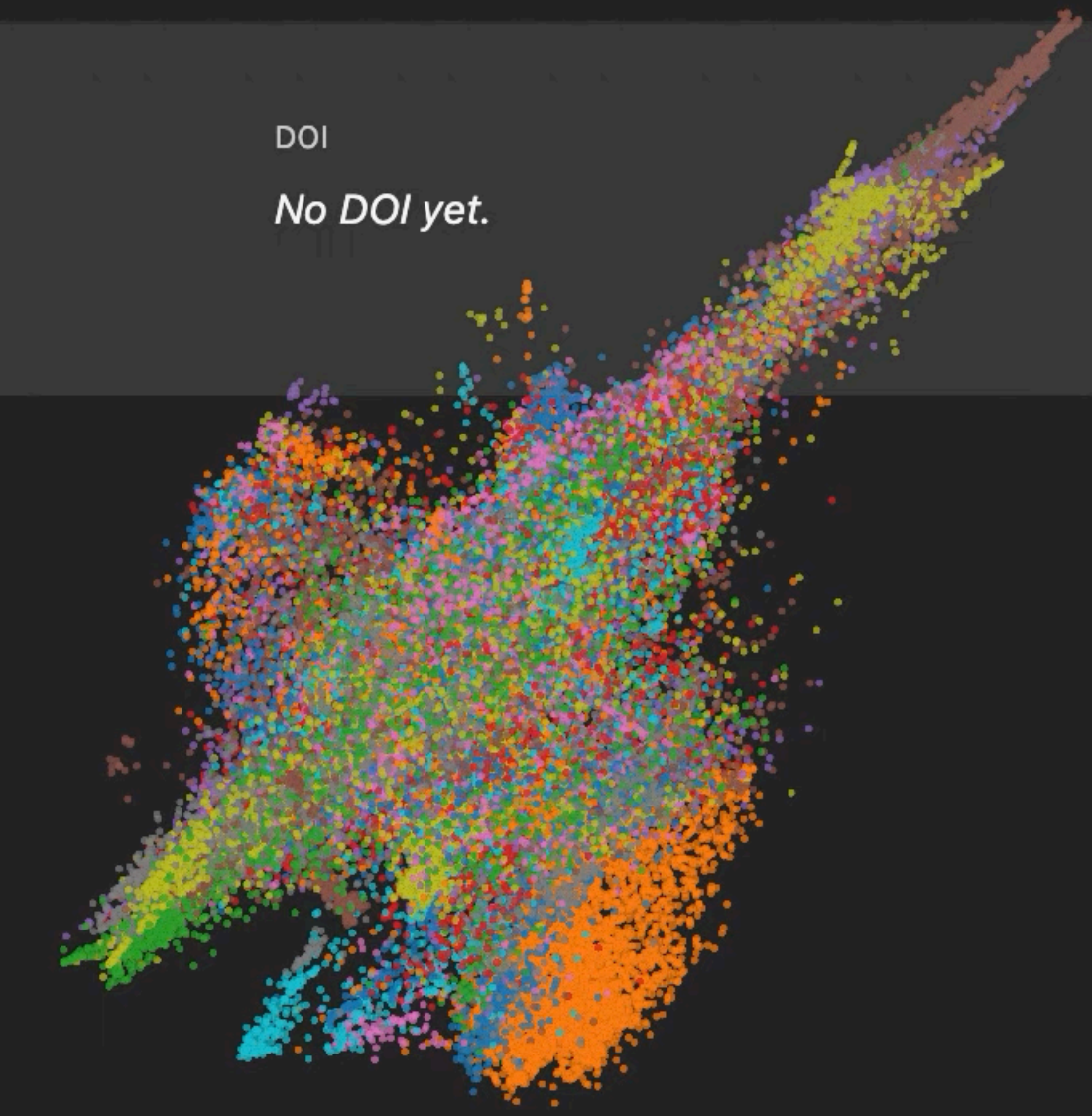
University of Arizona
University of Arizona

PUBLISHED

Not published yet.

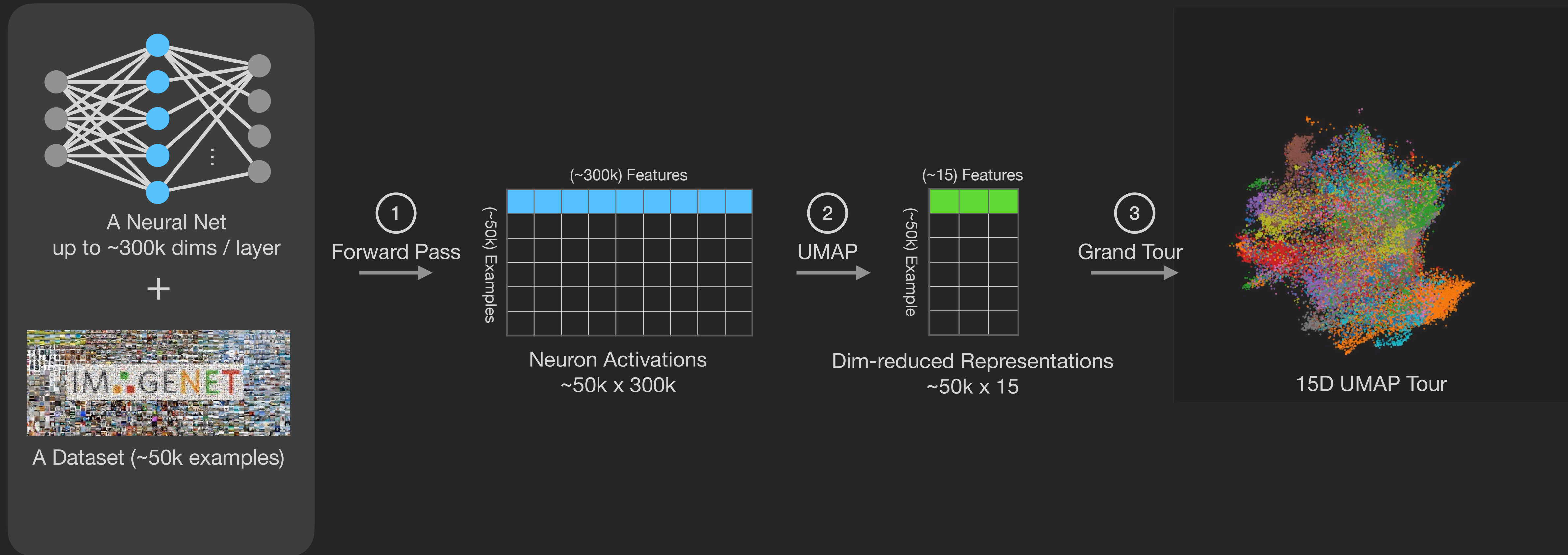
DOI

No DOI yet.

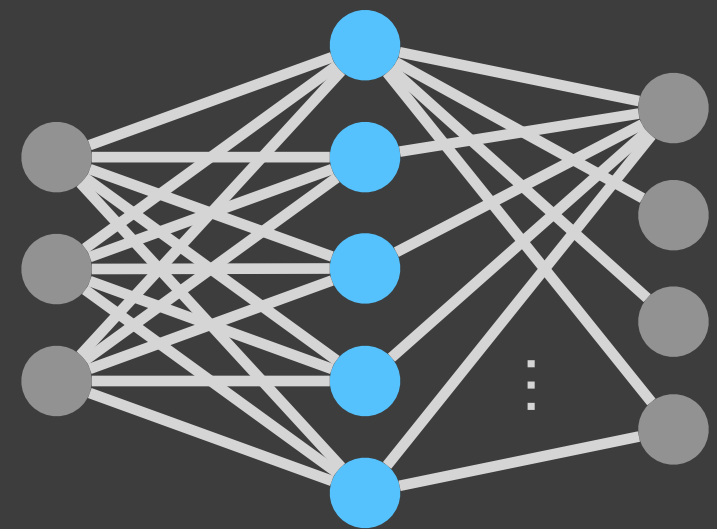


Introduction

The UMAP Tour



The UMAP Tour



A Neural Net
up to ~300k dims / layer

+

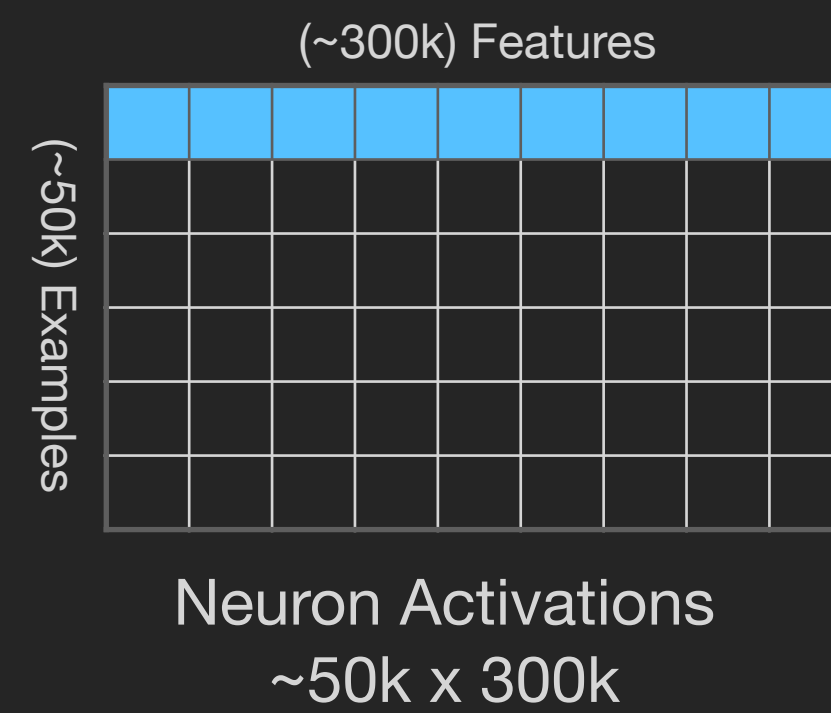


A Dataset (~50k examples)

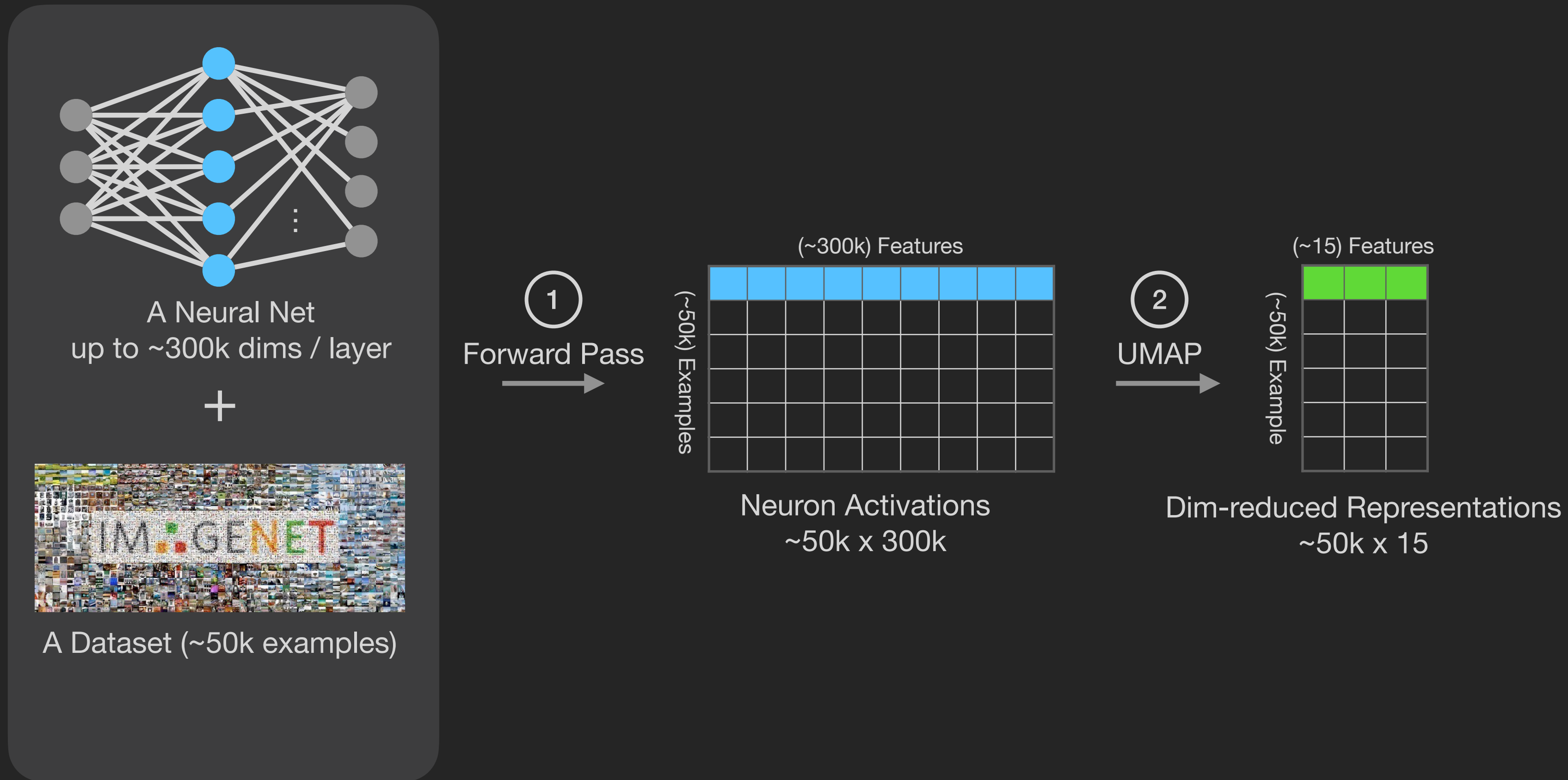
The UMAP Tour



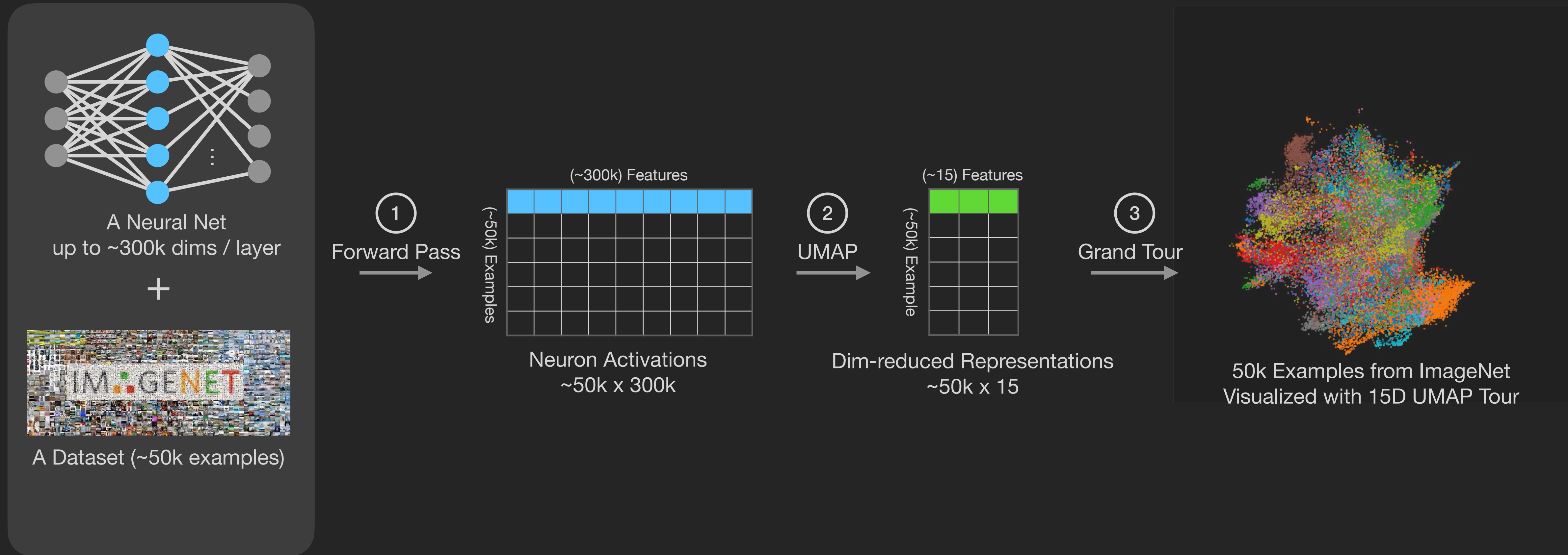
①
Forward Pass
→



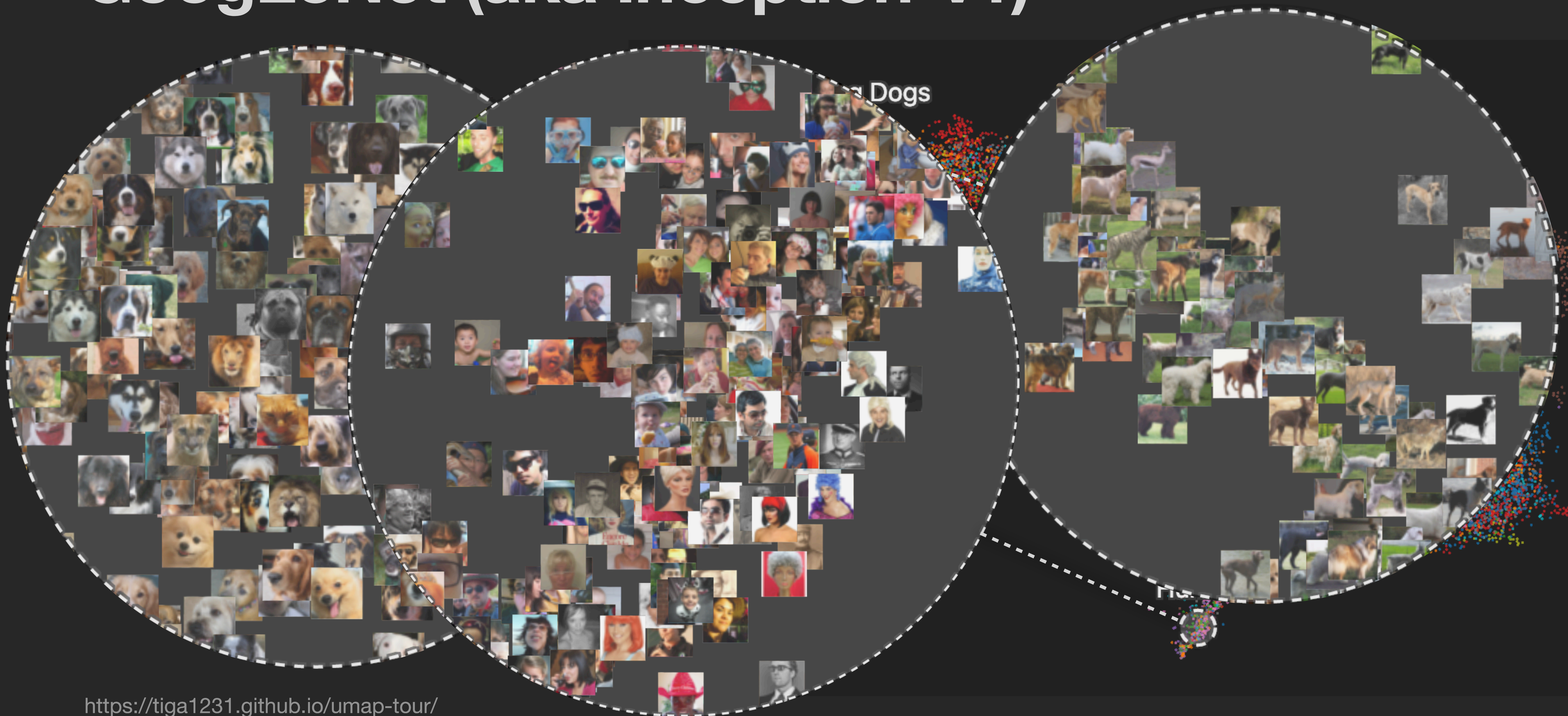
The UMAP Tour



The UMAP Tour

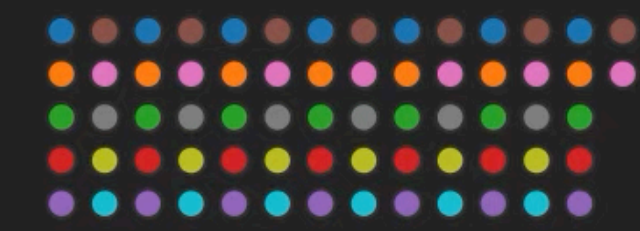
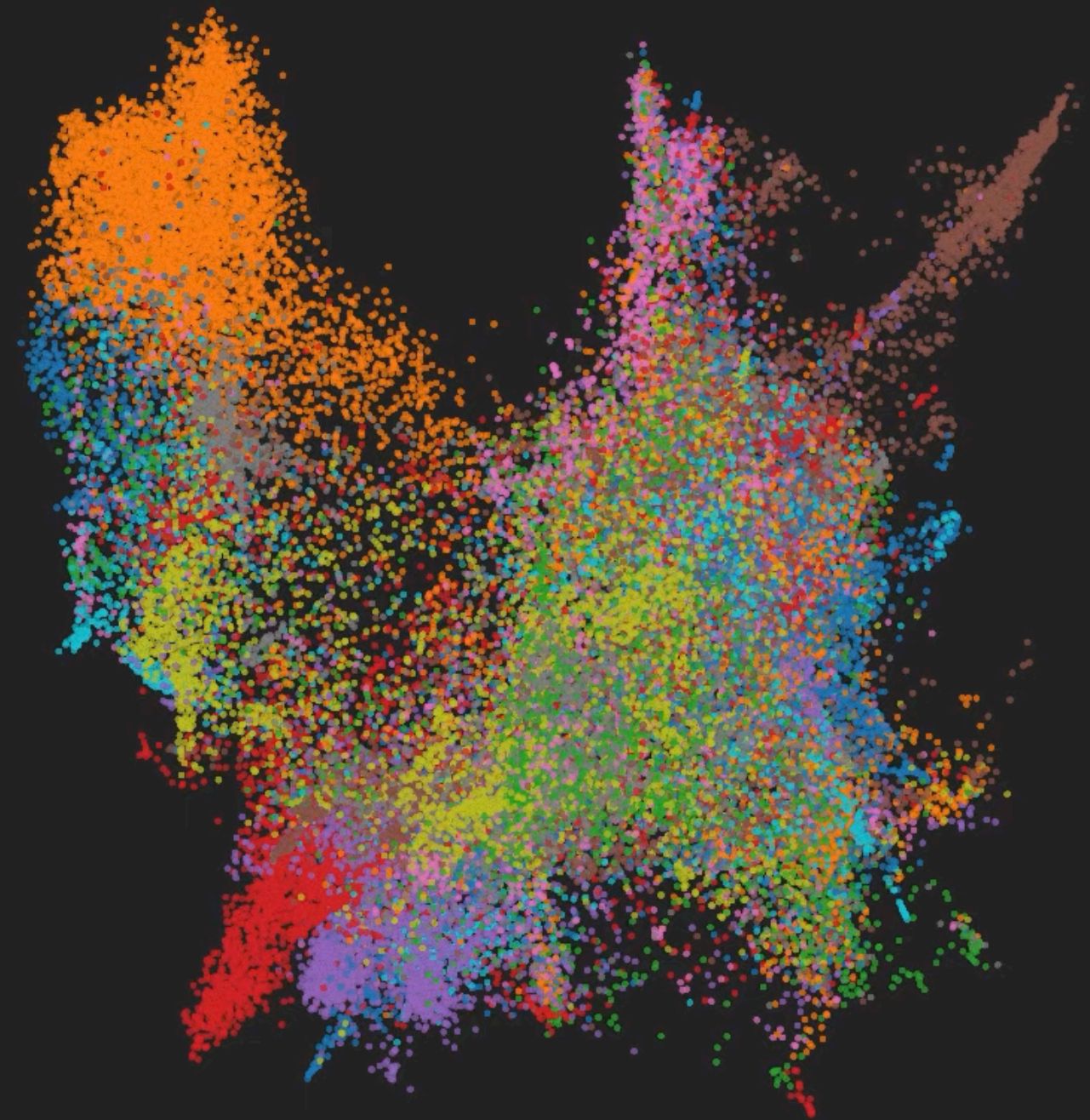


GoogLeNet (aka Inception-v1)





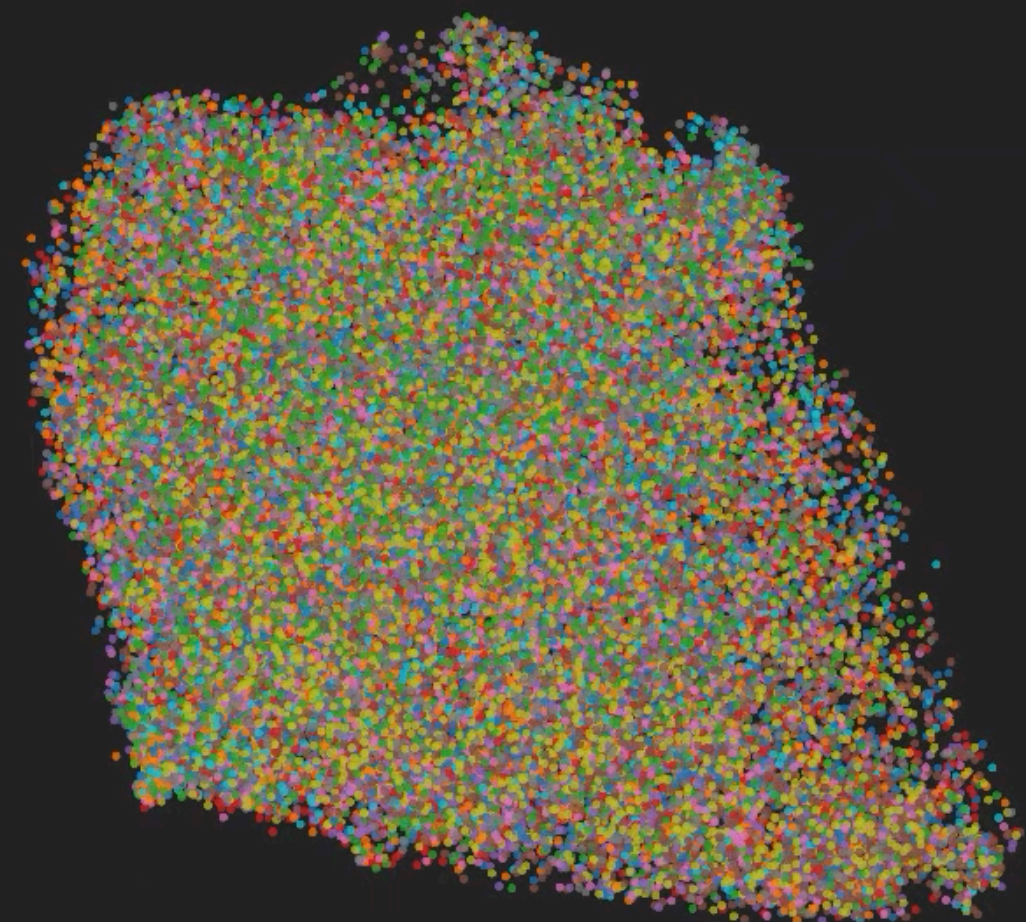
Direct Manipulation Handles



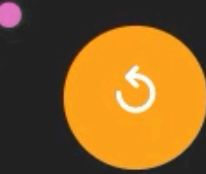
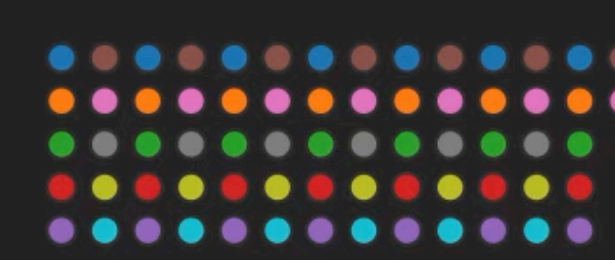


A Journey Into the Layers

with Orthogonal Procrustes Analysis



0-Input

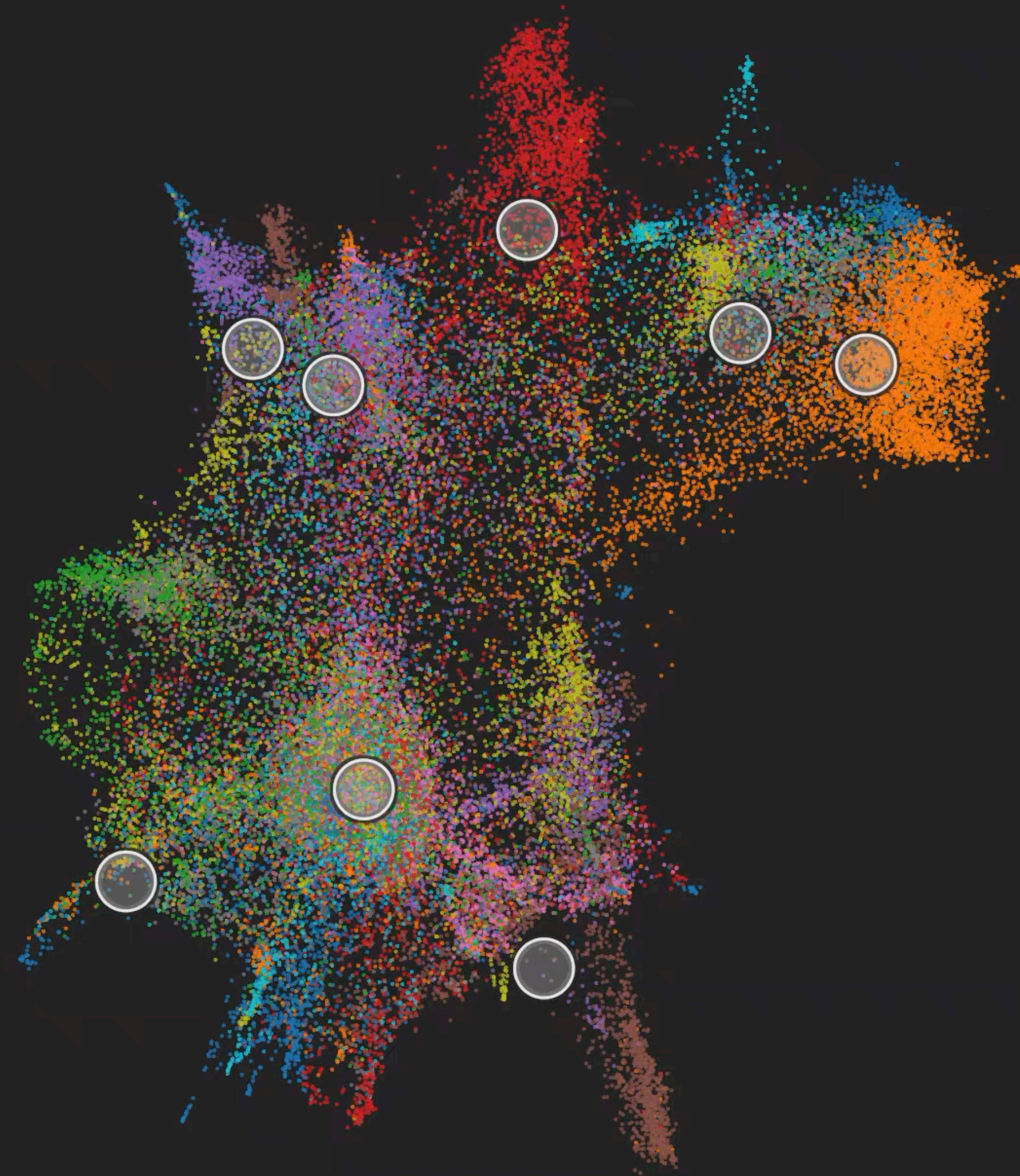


Comparing DNNs



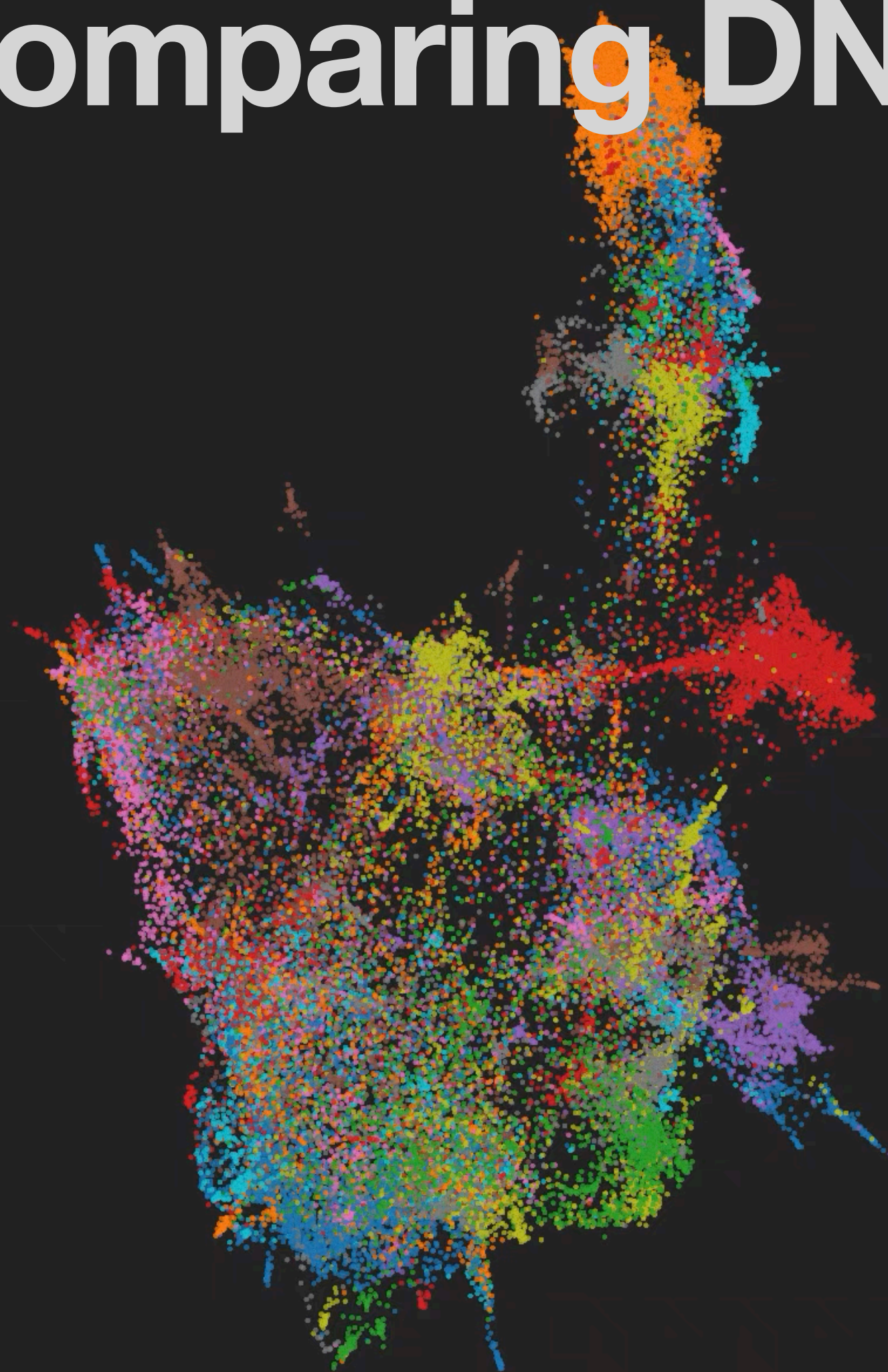
ResNet-50

vs



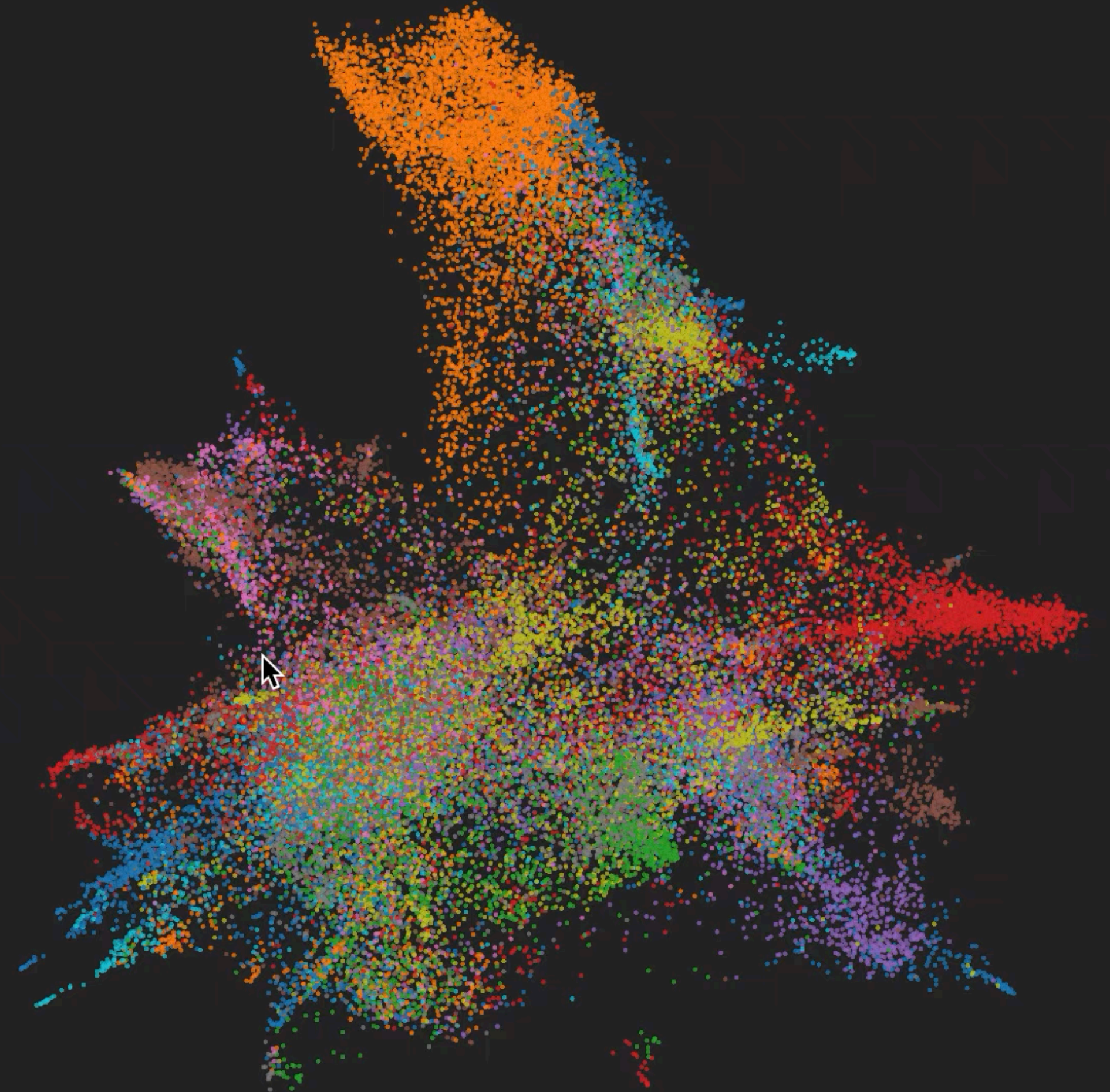
GoogLeNet

Comparing DNNs (Cont.)



ResNet-50

vs



GoogLeNet

Summary

- UMAP Tour = UMAP + Grand Tour
- “Handles” for Interaction
- Orthogonal Procrustes for Alignment



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