In the vast ever-evolving landscape of machine learning there exists a set of techniques that distills complex data in
*Representations A representation can be viewed as a way of transforming or encoding data in a manner that captu
The question of what makes a valid representation is often explained by the terms sufficiency and minimality. A go
For instance, in the context of image recognition, a good representation should capture the distinguishing features o
The informational bottleneck
*Research Question In our investigation, we delve into the learning capabilities of a Vector Quantified Variational A
To critically evaluate the representations' utility for our classification task, we adopt a set of metrics:

Intrinstic dimension. This measure identifies the most straightforward yet comprehensive set of features required to g

Non linear probe. We employ a K-Nearest Neighbors (KNN) approach, experimenting with k values of 1, 5, and 10, t

Linear probe. By fitting a Support Vector Machine (SVM) with a linear kernel to our discrete latent variables, we inv

These metrics serve as the cornerstone for our analysis, ensuring that we scrutinize the balance between complexity
In the context of the Informational Bottleneck (IB) principle. our evaluation of the Vector Quantified Variational A