**Annex N. Difference Between a Generative Approach and an Exemplar-Based Generative Approach**

| **Aspect** | **Generative Approach** | **Exemplar-Based Generative Approach** |
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| **Definition** | Models the full probability distribution P(X)P(X)P(X) or P(X,Y)P(X, Y)P(X,Y) to generate new samples. | Uses **specific examples (exemplars)** from training data to generate new samples. |
| **How It Learns** | Learns an overall probabilistic representation of data. | Memorizes or stores representative examples and generates new data based on them. |
| **Flexibility** | Can generate entirely new samples beyond observed data. | Generates new samples by modifying or interpolating between known exemplars. |
| **Computational Complexity** | Often requires training on the entire dataset and learning probability distributions. | May be computationally simpler but needs efficient similarity-based retrieval. |
| **Examples of Models** | Bayesian Networks, Gaussian Mixture Models (GMMs), Variational Autoencoders (VAEs), Generative Adversarial Networks (GANs). | k-Nearest Neighbors (k-NN) with density estimation, case-based reasoning, exemplar-based Bayesian models. |
| **Application Areas** | Unsupervised learning, synthetic data generation, probabilistic modeling. | Pattern recognition, anomaly detection, instance-based learning. |