Autoencoder the Squirrel

What is an Autoencoder?

- An autoencoder is a type of neural network used to compress and reconstruct data.

- Like a squirrel:
- • Gathers nuts (input data)
- • Hides them efficiently (encoding)
- • Retrieves them when needed (decoding)

How It Works

- 1. Encoder: Compresses input into a smaller representation
- 2. Latent Space: Compact 'memory' storage
- 3. Decoder: Reconstructs original data from compressed form

- Squirrel analogy:
- • Backpack = Encoder
- • Hidden stash = Latent space
- • Rebuilding nut stash = Decoder

Applications of Autoencoders

- Image Compression
- Noise Reduction
- Anomaly Detection
- Pre-training for Deep Learning Models