

High-Dimensional Sequences Challenge

⚠ Challenges

- ☒ **Curse of dimensionality** in sequence modeling
- 💥 **Exponential growth** in parameter space
- 🛠 Need for **automatic feature extraction**
- 🎨 Raw data (pixels, waveforms) vs **handcrafted features**

✓ Deep Learning Solution

- 🏗 **Hierarchical** representation learning
- ⟳ **End-to-end training** from raw sequences
- 🤖 **Automatic feature learning** at multiple levels
- 🎯 Direct processing of **raw data**



Deep Learning Enables

Automatic feature extraction and hierarchical representation learning
from high-dimensional raw sequences