- **Intro to Autoencoders**
- **Import TensorFlow and other libraries**
- **Load the dataset**
- **First example: Basic autoencoder**
- **Second example: Image denoising**
- **Third example: Anomaly detection**
- **Load ECG data**
- **Normalize the data to [0,1].**
- **Plot an anomalous ECG.**
- **Build the model**
- **Detect anomalies**
- **Choose a threshold value that is one standard deviations above the mean.**
- **Classify an ECG as an anomaly if the reconstruction error is greater than the threshold.**
- **Convolutional Variational Autoencoder**
- **Use tf.data to batch and shuffle the data**
- **Reparameterization trick**
- **Network architecture**
- **Define the loss function and the optimizer**
- **Training**