

Real-valued (Medical) Time Series Generation with Recurrent Conditional GANs

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- ▶ Want to generate **synthetic medical data**
 - ▶ ... for data sharing
 - ▶ ... for data augmentation
 - ▶ ... for training clinicians
- ▶ Focus on **ICU time series** (eICU database)
- ▶ Use **generative adversarial networks** (GANs)
 - ▶ Build a GAN for real-valued **time series** - RGAN
 - ▶ Condition it on additional information - RCGAN
- ▶ How to **evaluate**? (“TSTR score”)
 1. Generate a **synthetic training set** from RCGAN
 2. Train a model on it
 3. Test the model on a **real test set**
- ▶ What about patient **privacy**?
 - ▶ Empirical analysis
 - ▶ Training with **differential privacy**

