



Recurrent Neural Networks

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Outline

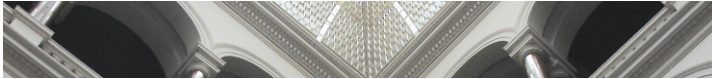
Recurrent Neural Networks

- Overview & Applications
- RNNs from differential equations
- Statistics of RNNs

Exploding and Vanishing Gradient Problem

- Echo State Networks
- Gradient Clipping / Momentum
- Long Short-Term Memory & Gated RNNs







Echo State Networks (ESNs)

somefigure





Gradient Clipping / Momentum

somefigure





Long Short-Term Memory (LSTM)

somefigure





ToDo

- **ToDo** schreiben
- **ToDo** abarbeiten

