

Continuous tensor signal representation in BCI neural interface construction

Datasets

Event-related potentials (P300, EEG) – BCI dataset for signal classification, main dataset for current study

<https://ieee-dataport.org/documents/event-related-potentials-p300-eeeg-bci-dataset>

DEAPdataset – a dataset for emotion analysis using EEG, physiological and video signals

<https://www.eecs.qmul.ac.uk/mmv/datasets/deap/>

Food-Tracking Task dataset from Neurotycho - a dataset containing ECoG data corresponding to a monkey's limb movement

<http://www.neurotycho.org/food-tracking-task>

Methods

S4 – Structured State Space for Sequence Modeling <https://srush.github.io/annotated-s4/>

<https://arxiv.org/pdf/2111.00396>

S5 - Simplified Shotgun Stochastic Search with Screening

<https://rdrr.io/cran/BayesS5/man/S5.html>

HiPPO: Recurrent Memory with Optimal Polynomial Projections

<https://arxiv.org/pdf/2008.07669.pdf>

Independent component analysis – Wiki

https://en.wikipedia.org/wiki/Independent_component_analysis

Tensor NN

Tensor Networks Meet Neural Networks: A Survey and Future Perspectives

<https://arxiv.org/pdf/2302.09019.pdf>

Tensorizing Neural Networks

https://proceedings.neurips.cc/paper_files/paper/2015/file/6855456e2fe46a9d49d3d3af4f57443d-Paper.pdf

Tensor Decomposition via Variational Auto-Encoder <https://arxiv.org/pdf/1611.00866.pdf>

Neural ODE

Тьюриал «Знакомство с Neural ODE» <https://habr.com/ru/companies/ods/articles/442002/>

Neural Ordinary Differential Equations - main article about NODEs describing their basic structure and learning by adjoint backpropagation. Also contains some benchmark test results in comparison to ResNet and RNN.

https://proceedings.neurips.cc/paper_files/paper/2018/file/69386f6bb1dfed68692a24c8686939b9-Paper.pdf

Neural CDE

Explanation by Patrick Kidger <https://www.youtube.com/watch?v=sbclKugEIZ4>

Code <https://github.com/patrick-kidger/NeuralCDE>

Tensor Neural ODE

Continuous-Time Channel Prediction Based on Tensor Neural Ordinary Differential Equation
<https://arxiv.org/pdf/2307.16518.pdf>

Note that in this and other papers tensor neural ordinary equations stand for network consisting of tensorized discrete-time networks like GRU as encoders and neural ODEs as decoders.

Neural SDE

From Noise to Signal: Unveiling Treatment Effects from Digital Health Data through Pharmacology-Informed Neural-SDE <https://arxiv.org/html/2403.03274v1>