Handout

- Git
  - *git clone github.com/kschreiblehner/tensorboard_tutorial.git*
  - Ordner: material
- Tutorial und Aufgaben
  - Ordner: practice

Grundlagen in TensorBoard

Karsten Schreiblehner
11. Juni 2020

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  - *git clone github.com/kschreiblehner/tensorboard_tutorial.git*
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  - Ordner: practice

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accuracy: 0.7418
Epoch 9/50
32/32 [==============================] - 2s 49ms/step - loss: 1.0538 - accuracy: 0.8240 - val_loss: 2.9378 - val_
accuracy: 0.7497
Epoch 10/50
32/32 [==============================] - 2s 49ms/step - loss: 0.8670 - accuracy: 0.8400 - val_loss: 2.9800 - val_
accuracy: 0.7581
Epoch 11/50
32/32 [==============================] - 2s 49ms/step - loss: 0.7464 - accuracy: 0.8530 - val_loss: 3.5558 - val_
accuracy: 0.7413
Epoch 12/50
32/32 [==============================] - 2s 48ms/step - loss: 0.6638 - accuracy: 0.8560 - val_loss: 2.9108 - val_
accuracy: 0.7631
Epoch 13/50
32/32 [==============================] - 2s 49ms/step - loss: 0.4751 - accuracy: 0.8690 - val_loss: 2.6289 - val_
accuracy: 0.7543
Epoch 14/50
32/32 [==============================] - 2s 51ms/step - loss: 0.7479 - accuracy: 0.8370 - val_loss: 2.4456 - val_
accuracy: 0.7607
```

- Speichern der Resultate
- Programm zum Plotten

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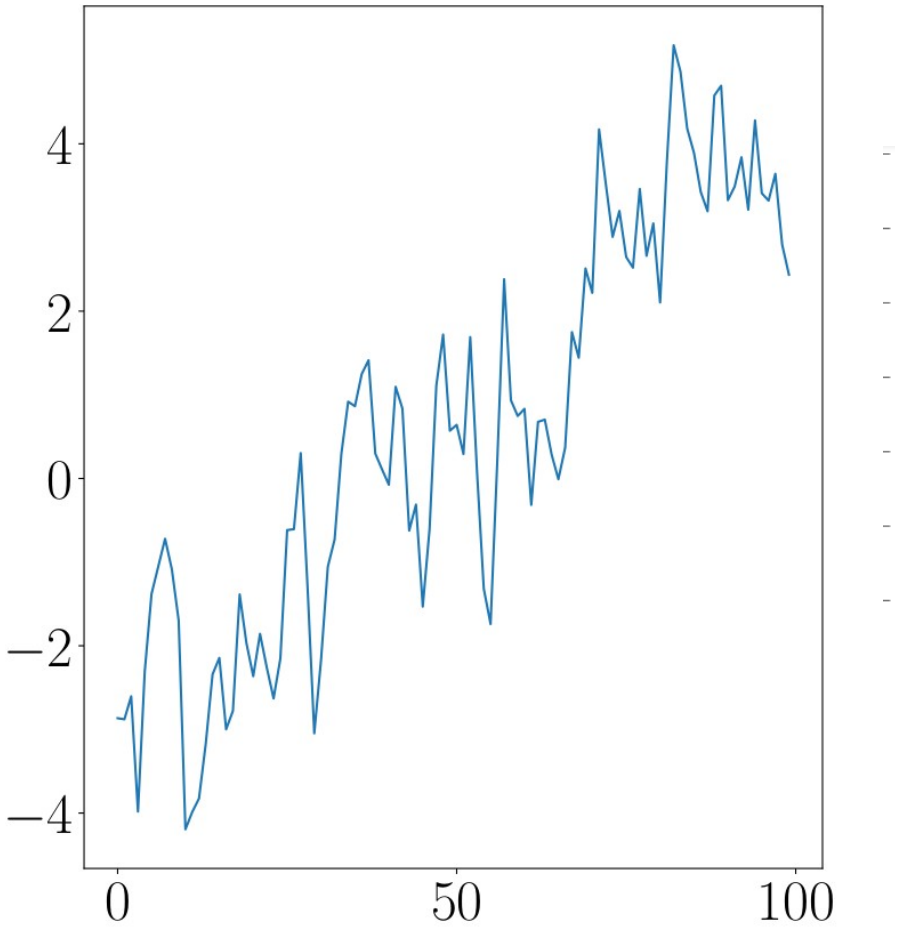
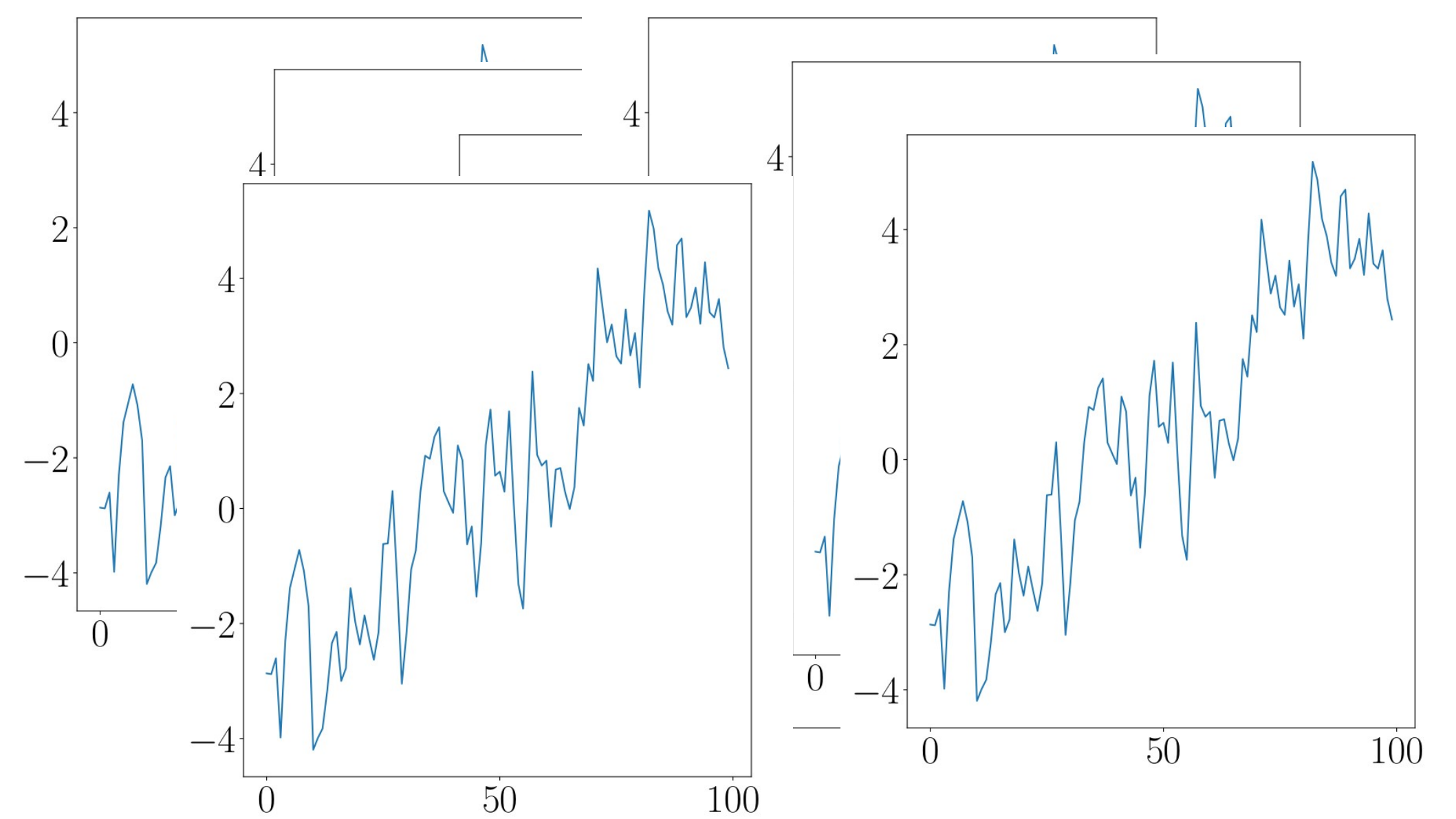


Können Sie mir einen Vergleich für alle Konfigurationen zeigen?


4
2
0
−2
−4
0
4
−2
−4
0
50
100
4
0
−4
0
50
100

TensorBoard

- Webservice
- Visualisierungstool für
  - Metriken
  - Tensorflow-Berechnungsgraphen
  - Vergleich von Hyperparameter
  - ...

Installation

- Lokal
  - *pip install tensorboard*
- Docker
  - *docker pull tensorflow/tensorflow:latest*
- Standalone:
  - *https://github.com/dmlc/tensorboard*

Einbindung

- Alles ist ein Log!
- Keras
  - Über Callback *TensorBoard*
- Sonst:
  - Erstellung Summary-Writer
  - Verschiedene Funktionalitäten wie
    - *scalar*, *text*, *image*

Tensorboard Scalars

- Metriken, Selbstdefinierte Werte
- Keras-Modell
  - Callback
- Sonstige Modelle:
  - Erstellung Summary-Writer
  - *tf.summary.scalar(metric_name, value, step)*

Tensorboard Graph

- Parameter: *write_graph=True* (default)
- Layerweise
- Operationweise
- Keras (konzeptioneller Graph)
- *tf.function*

Hyperparameter Tuning

- Vergleich verschiedener Modellparameter
- Plugin: Hparams
- *hp.KerasCallback*

Weitere Funktionen

- Images
- Text
- Projector
- What if Tool
- Profiling Tool
- ...