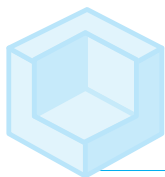




読者特典

リンク集



リンク集

本書で登場した外部リンクをまとめました。

● Chapter1

● 『Hidden Technical Debt in Machine Learning Systems』

URL <http://papers.neurips.cc/paper/5656-hidden-technical-debt-in-machine-learning-systems.pdf>

● Machine learning system design pattern

URL <https://github.com/mercari/ml-system-design-pattern>

● Pythonで作る機械学習システムパターン

URL <https://pycon.jp/2020/timetable/?id=203111>

● PAIR (People + AI Research Guidebook)

URL <https://pair.withgoogle.com/guidebook>

● マイクロサービスアーキテクチャ

URL <https://microservices.io/patterns/microservices.html>

● Docker コンテナ

URL <https://www.docker.com/>

● Chapter2

● Pipenv

URL <https://pipenv.pypa.io/en/latest/>

● Poetry

URL <https://python-poetry.org/>

● FastAPI

URL <https://fastapi.tiangolo.com/ja/>

● PostgreSQL

URL <https://www.postgresql.org/>

● Uvicorn

URL <https://www.uvicorn.org/>

● Gunicorn

URL <https://gunicorn.org/>

● Swagger UI

URL <https://swagger.io/>

● MLflow

URL <https://mlflow.org/>

● Amazon SageMaker

URL https://docs.aws.amazon.com/ja_jp/sagemaker/

- **Kubeflow**

URL <https://www.kubeflow.org/>

- **Metaflow**

URL <https://metaflow.org/>

- **Cifar-10**

URL <https://www.cs.toronto.edu/~kriz/cifar.html>

- **ml-system-in-actions/chapter2_training/cifar10/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter2_training/cifar10

- **VGG11**

URL <https://arxiv.org/pdf/1409.1556.pdf>

● Chapter3

- **Python**

URL <https://www.python.org/>

- **Jupyter Notebook**

URL <https://jupyter.org/>

- **TensorFlow**

URL <https://www.tensorflow.org/>

- **OpenCV**

URL <https://opencv.org/>

- **MeCab**

URL <https://taku910.github.io/mecab/>

- **CVE**

URL <https://cve.mitre.org/index.html>

- **JVN**

URL <https://jvndb.jvn.jp/>

- **ml-system-in-actions/chapter3_release_patterns/model_in_image_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter3_release_patterns/model_in_image_pattern

- **Docker Hub**

URL <https://hub.docker.com/>

- **ml-system-in-actions/chapter3_release_patterns/model_load_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter3_release_patterns/model_load_pattern

● Chapter4

- **Flask**

URL <https://flask.palletsprojects.com/>

- **FastAPI**

URL <https://fastapi.tiangolo.com/>

- **Iris dataset**

URL https://scikit-learn.org/stable/auto_examples/datasets/plot_iris_dataset.html

- **ml-system-in-actions/chapter4_serving_patterns/web_single_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/web_single_pattern

- **Docker**

URL <https://www.docker.com/>

- **Docker Compose**

URL <https://docs.docker.jp/compose/toc.html>

- **Kubernetes**

URL <https://kubernetes.io/ja/>

- **Python3.8**

URL <https://www.python.org/downloads/>

- **Gunicorn**

URL <https://gunicorn.org/>

- **FastAPI**

URL <https://fastapi.tiangolo.com/>

- **scikit-learn**

URL <https://scikit-learn.org/stable/>

● TensorFlow

URL <https://www.tensorflow.org/>

● PyTorch

URL <https://pytorch.org/>

● TensorFlow Serving

URL <https://www.tensorflow.org/tfx/guide/serving>

● ONNX Runtime

URL <https://www.onnxruntime.ai/>

● MySQL

URL <https://www.mysql.com/jp/>

● Redis

URL <https://redis.io/>

● Uvicorn

URL <https://www.uvicorn.org/>

● Pydantic

URL <https://pydantic-docs.helpmanual.io>

● Gunicorn

URL <https://gunicorn.org/>

- **ml-system-in-actions/chapter4_serving_patterns/synchronous_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/synchronous_pattern

- **Apache Kafka**

URL <https://kafka.apache.org/>

- **RabbitMQ**

URL <https://www.rabbitmq.com/>

- **Redis Cache**

URL <https://redis.io/>

- **ml-system-in-actions/chapter4_serving_patterns/asynchronous_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/asynchronous_pattern

- **ml-system-in-actions/chapter4_serving_patterns/batch_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/batch_pattern

- **SQLAlchemy**

URL <https://www.sqlalchemy.org/>

- **ml-system-in-actions/chapter4_serving_patterns/batch_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/batch_pattern

- **Pydantic**

URL <https://pydantic-docs.helpmanual.io/>

● Kubernetes CronJobs

URL <https://kubernetes.io/ja/docs/concepts/workloads/controllers/cron-jobs/>

● Kubernetes Pods

URL <https://kubernetes.io/ja/docs/concepts/workloads/pods/pod-overview/>

● scikit-learn pipeline

URL <https://scikit-learn.org/stable/modules/generated/sklearn.pipeline.Pipeline.html>

● ml-system-in-actions/chapter4_serving_patterns/prep_pred_pattern/

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/prep_pred_pattern

● onnxruntime/docs/ONNX_Runtime_Server_Usage.md

URL https://github.com/microsoft/onnxruntime/blob/master/docs/ONNX_Runtime_Server_Usage.md

● API コンポジションパターン

URL <https://microservices.io/patterns/data/api-composition.html>

● ml-system-in-actions/chapter4_serving_patterns/horizontal_microservice_pattern/

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/horizontal_microservice_pattern

● MobileNetV2

URL <https://arxiv.org/pdf/1801.04381.pdf>

● InceptionV3

URL <https://static.googleusercontent.com/media/research.google.com/ja//pubs/archive/44903.pdf>

- **TensorFlow Hub**

URL <https://tfhub.dev/>

- **ml-system-in-actions/chapter4_serving_patterns/sync_async_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/sync_async_pattern

- **Docker Compose**

URL <https://docs.docker.com/compose/>

- **XGBoost**

URL <https://xgboost.readthedocs.io/en/latest/>

- **MobileNet**

URL <https://arxiv.org/pdf/1704.04861.pdf>

- **MobileBERT**

URL <https://arxiv.org/pdf/2004.02984.pdf>

- **ALBERT**

URL <https://arxiv.org/pdf/1909.11942.pdf>

- **NASNet**

URL <https://arxiv.org/pdf/1707.07012.pdf>

- **BERT**

URL <https://arxiv.org/pdf/1810.04805.pdf>

- **Memcached**

URL <http://www.memcached.org/>

- **ml-system-in-actions/chapter4_serving_patterns/prediction_cache_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/prediction_cache_pattern

- **メルカリ社：写真検索機能**

URL <https://logmi.jp/tech/articles/322889>

URL <https://engineering.mercari.com/blog/entry/miru2018/>

- **ml-system-in-actions/chapter4_serving_patterns/data_cache_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/data_cache_pattern

- **Protocol Buffers**

URL <https://github.com/protocolbuffers/protobuf/releases/>

- **gRPC**

URL <https://www.grpc.io/>

- **ml-system-in-actions/chapter4_serving_patterns/template_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/template_pattern

- **cookiecutter**

URL <https://github.com/cookiecutter/cookiecutter>

- **TensorFlow Lite**

URL <https://www.tensorflow.org/lite/guide?hl=ja>

● PyTorch Mobile

URL <https://pytorch.org/mobile/home/>

● Edge TPU

URL <https://cloud.google.com/edge-tpu?hl=ja>

● NVIDIA Jetson Nano

URL <https://www.nvidia.com/ja-jp/autonomous-machines/embedded-systems/jetson-nano-developer-kit/>

● CoreML

URL <https://developer.apple.com/jp/machine-learning/>

● NNAPI

URL <https://developer.android.com/ndk/guides/neuralnetworks?hl=ja>

● Apache TVM

URL <https://tvm.apache.org/>

● Unity Barracuda

URL <https://github.com/Unity-Technologies/barracuda-release>

● mediapipe

URL <https://github.com/google/mediapipe>

● ml-system-in-actions/chapter4_serving_patterns/edge_ai_pattern/

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter4_serving_patterns/edge_ai_pattern

● Chapter5

● Fluentd

URL <https://www.fluentd.org/>

● CloudWatch

URL <https://aws.amazon.com/jp/cloudwatch/>

● Cloud Logging

URL <https://cloud.google.com/logging?hl=ja>

● Kubernetes クラスター

URL <https://kubernetes.io/ja/docs/tutorials/kubernetes-basics/create-cluster/cluster-intro/>

● One-class SVM

URL https://scikit-learn.org/stable/modules/outlier_detection.html

● ml-system-in-actions/chapter5_operations/prediction_log_pattern/

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter5_operations/prediction_log_pattern

● ml-system-in-actions/chapter5_operations/prediction_monitoring_pattern/

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter5_operations/prediction_monitoring_pattern

● ml-system-in-actions/chapter5_operations/prediction_monitoring_pattern/job/rand_iris.csv

URL https://github.com/shibuiwilliam/ml-system-in-actions/blob/main/chapter5_operations/prediction_monitoring_pattern/job/rand_iris.csv

● Chapter6

- **tsenart/vegeta**

URL <https://github.com/tsenart/vegeta>

- **ml-system-in-actions/chapter6_operation_management/load_test_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter6_operation_management/load_test_pattern

- **KubernetesのConfigMap**

URL <https://kubernetes.io/ja/docs/concepts/configuration/configmap/>

- **ml-system-in-actions/chapter6_operation_management/circuit_breaker_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter6_operation_management/circuit_breaker_pattern

- **ml-system-in-actions/chapter6_operation_management/shadow_ab_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter6_operation_management/shadow_ab_pattern

- **ml-system-in-actions/chapter6_operation_management/online_ab_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter6_operation_management/online_ab_pattern

- **ml-system-in-actions/chapter6_operation_management/paramater_based_pattern/**

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter6_operation_management/paramater_based_pattern

- ImageNet

URL <http://www.image-net.org/>

- 植物データ

URL https://github.com/visipedia/inat_comp/tree/master/2017

- ImageNet 学習済み MobileNetV2

URL https://tfhub.dev/google/imagenet/mobilenet_v2_140_224/classification/4

- 植物データで学習した MobileNetV2

URL https://tfhub.dev/google/aiy/vision/classifier/plants_V1/1

- ml-system-in-actions/chapter6_operation_management/condition_based_pattern/

URL https://github.com/shibuiwilliam/ml-system-in-actions/tree/main/chapter6_operation_management/condition_based_pattern

● 著者プロフィール

- GitHub 「Machine learning system design pattern」

URL <https://github.com/mercari/ml-system-design-pattern>

- 著者の GitHub アカウント

URL <https://github.com/shibuiwilliam>