BruceTS

AI service for time series prediction

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CONTENTS

BruceTS

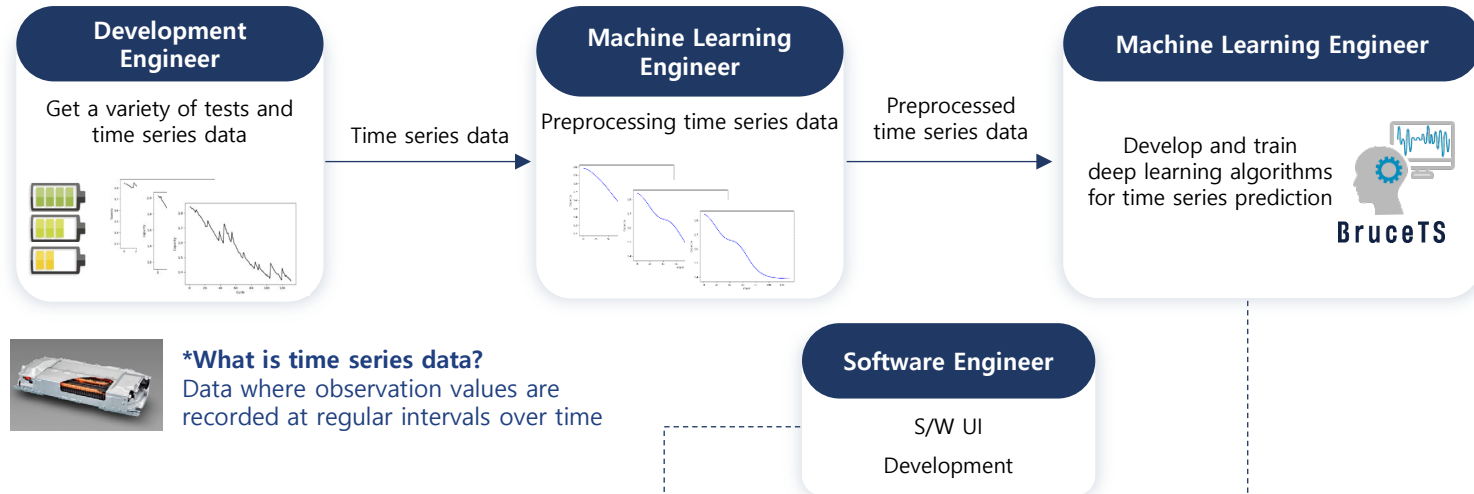BruceTS is a technology that utilizes Deep Learning to predict time series data mainly in the engineering field.

It is a customized service that offers assistance in the form of a service that satisfies customer needs.
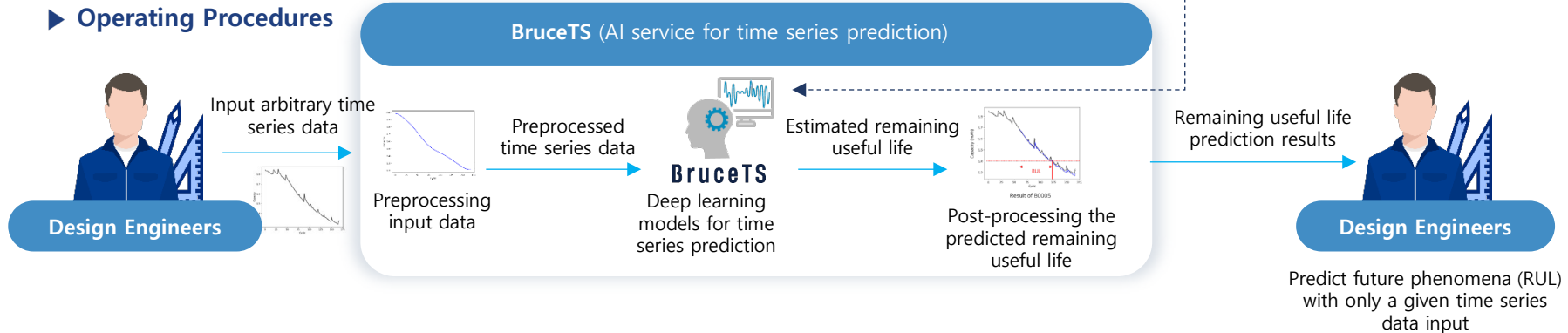
Preprocessing time series data

Apply deep learning methods optimized for time series prediction

BruceTS

Predicting future phenomena

Provide time series prediction tools that are easy to put into practice
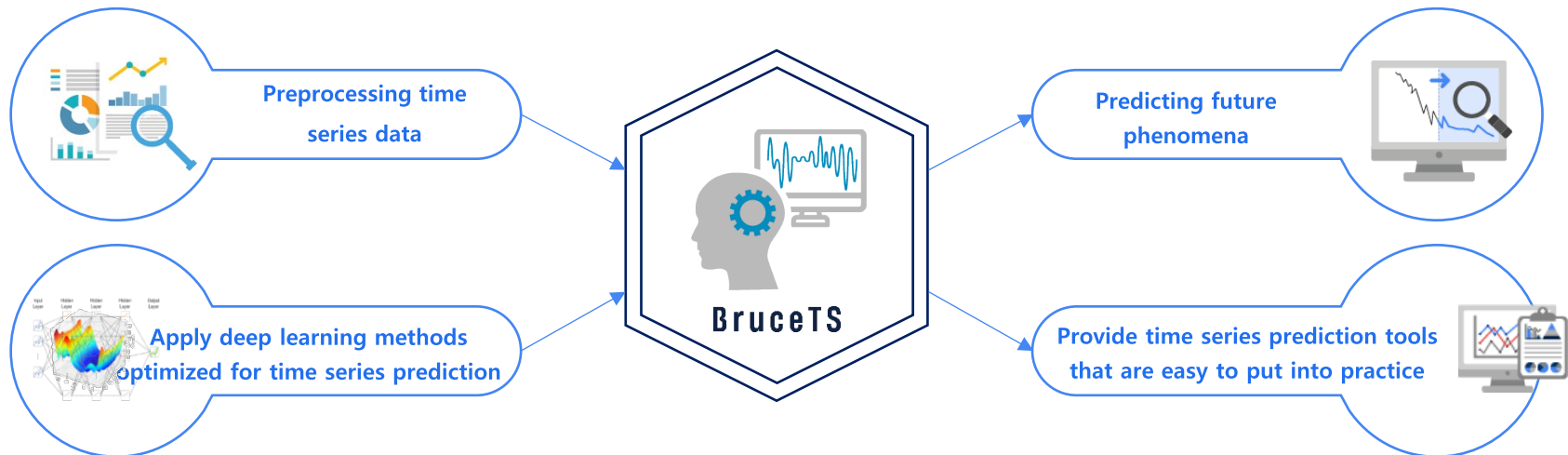
BruceTS Development Process / Operating Procedures

▶ **Development Process**

Development Engineer

Get a variety of tests and time series data

Time series data

Machine Learning Engineer

Preprocessing time series data

Preprocessed time series data

Machine Learning Engineer

Develop and train deep learning algorithms for time series prediction

BruceTS

*What is time series data?
Data where observation values are recorded at regular intervals over time

Software Engineer

S/W UI Development

▶ **Operating Procedures**

BruceTS (AI service for time series prediction)

Design Engineers

Input arbitrary time series data

Preprocessing input data

Preprocessed time series data

BruceTS

Deep learning models for time series prediction

Estimated remaining useful life

Post-processing the predicted remaining useful life

Remaining useful life prediction results

Design Engineers

Predict future phenomena (RUL) with only a given time series data input

Features of BruceTS

Preprocessing time series data

- Preprocess raw time series data so that deep learning models can learn effectively

Predicting future phenomena

- Able to predict the future system phenomenon simply using the provided time-series data, without any actual experimentation

Apply the optimal deep learning method

- Perform deep learning by applying the latest and greatest deep learning
- methods for time series prediction

Provide time series forecasting tools that are easy to put into practice

- Easy to implement in practical situations.
- Launch the tool, enter the design you want to predict, and get instant predictions

Expected effect of BruceTS

Expected effect

Improve time series prediction accuracy

Accurately and quickly make time series predictions using any patterned time series data you have

Increase practical applicability

Easy to implement in practical situations

Application case of BruceTS - Remaining Useful Life (RUL) prediction of lithium-ion batteries

Goals

- Predicting SOH and RUL of lithium-ion batteries with deep learning based on accumulated state of health (SOH) time series data

Input data

- Time series that have not reached their end of life (EOL) Data

Deep Learning Method

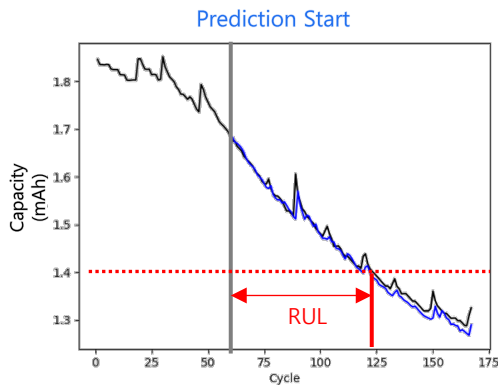- TCN(Temporal Convolutional Networks)

What BruceTS predicts

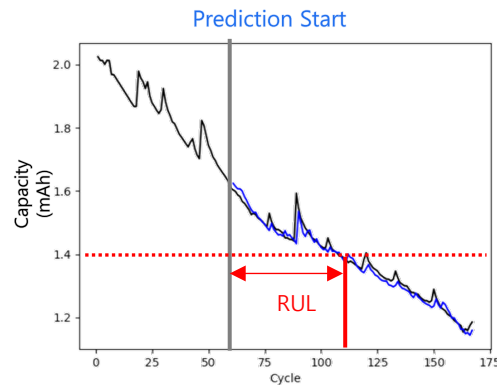- State of Health(SOH)
- Remaining Useful Life(RUL)

Time series data for a given lithium-ion battery

- B0005 - Capacity value from 0 to 60 cycles (mAh)
- B0006 - Capacity value from 0 to 60 cycles (mAh)
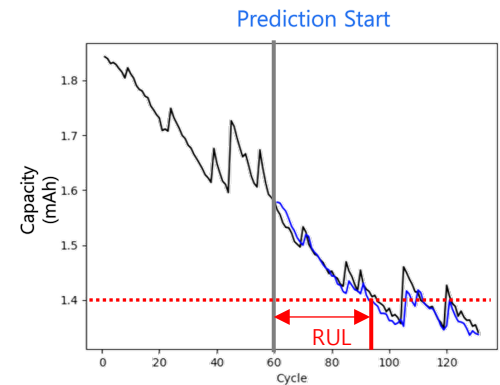- B0018 - Capacity value from 0 to 60 cycles (mAh)

━━ : SOH Ground truth   ━━ : SOH Predicted value

Result of B0005

Result of B0006

Result of B0018

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We will reward you with the best quality and service. thank you

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