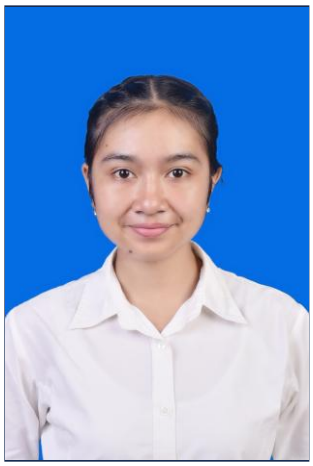
Appendix 1. Biography

BIOGRAPHY



Ni Putu Nita Nathalia was born in Denpasar on December 24th 2003. She is the daughter of Mr. I Gede Runitha and Mrs. Ni Luh Sariani. She is an Indonesian citizen and a follower of Hinduism. She currently resides at Jl. Gadung No.24, Br. Pegongan, Ds. Taman, Kec. Abainsemal, Badung. She completed her primary education at SD No. 5 Taman in 2016. She then continued her studies at SMP Negeri 1 Abiansemal and graduated in 2019, followed by SMA Negeri 2 Abiansemal, majoring in Mathematics and Natural Sciences (MIPA), from which she graduated in 2022. In the same year, she pursued her undergraduate studies in Computer Science at the Faculty of Engineering and Vocational, Ganesha University of Education. In the academic year of 2025, she successfully completed her undergraduate thesis entitled "Air Quality Prediction in Jakarta Using LSTM and GRU Model for Information Dissemination". During her studies, she was actively involved in research and academic publication. One of her published works is titled "Comparison of SVM, K-NN, RF, CART, and GNB Algorithms for Water Bodies Detection Using Sentinel-2 Level-2A Imagery in Nakhon Pathom, Thailand," in which she served as the first author. As of the completion of this thesis, she is in the process of preparing her next research article for publication.

Appendix 2. Architecture of DKI1-LSTM Model

```
def create_lstm_model(input_shape):
    model = Sequential([
        LSTM(50, return_sequences=True, input_shape=(22,6)),
        Dropout(0.2),
        LSTM(50, return_sequences=False),
        Dropout(0.2),
        Dense(6)
    ])
    model.compile(optimizer='adam', loss='mse')
    return model
```

Explanation:

In each LSTM models (DKI1, DKI2, DKI3, DKI4, DKI5), the difference architecture only on the timesteps component of the input_shape.

Appendix 3. Architecture of DKI1-GRU Model

```
def create_lstm_model(input_shape):
    model = Sequential([
        GRU(50, return_sequences=True, input_shape=(17,6)),
        Dropout(0.2),
        GRU(50, return_sequences=False),
        Dropout(0.2),
        Dense(6)
    ])
    model.compile(optimizer='adam', loss='mse')
    return model
```

Explanation:

In each GRU models (DKI1, DKI2, DKI3, DKI4, DKI5), the difference architecture only on the timesteps component of the input_shape.