

1. Introduction

Temperature is a component of weather and an entity that can be used to understand global warming. The extreme climate change in Indonesia causes quite extreme temperature changes in several areas in Indonesia such as Jakarta and Bekasi[1]. Besides that, according to most climatologists, extreme temperature changes occur because of human activities that cause greenhouse gases increased[2]. Temperature is also one factor that affects energy consumption[3]. According to some studies, 40% of Energy generated worldwide is used by buildings half of this is used for heating and air conditioning[4]. The increasing use of air conditioning and heating due to being easily influenced by the air temperature. Therefore, studying the air temperature fluctuations is necessary to estimate the energy requirements needed[5]. Everyone can find information about future temperature conditions by doing temperature forecasts. This information helps in water resource management, irrigation, and health[6]. Besides, temperature forecast is important for society because it helps their work[7]. Temperature forecast has been done by applying machine learning because it can provide high accuracy results[8]. Using machine learning to make temperature forecasts can speed up the prediction process because it has faster computational capabilities to handle complex meteorological data and large data sizes[9].

As Jakarta is one of the most populated cities in Indonesia, residents carry out many activities carried out by residents leading to increased use of air conditioning and heater use due to weather conditions. Therefore, temperature forecasting can help design an electricity forecasting system. Based on previous research, this research aimed to show the result of ConvLSTM to predict the temperature in Jakarta. Moreover, the result of ConvLSTM is compared with two other methods, MLP and LSTM. The accuracy of each model is measured by looking at the metric evaluation used in this research; each model is used to make temperature forecasts. This research uses meteorological data from ERA-5 as input.