

#Matematyka Konkretna

#Laboratorium 11

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#Wariant 1

```
import numpy as np
from tensorflow.keras.preprocessing.text import Tokenizer
from tensorflow.keras.preprocessing.sequence import pad_sequences
from tensorflow.keras.utils import to_categorical
from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Embedding, LSTM, Dense

text = "Artificial intelligence (AI) is intelligence-perceiving,
synthesizing, and inferring information-demonstrated by machines, as
opposed to intelligence displayed by non-human animals or by humans"

tokenizer = Tokenizer()
tokenizer.fit_on_texts([text])
total_words = len(tokenizer.word_index) + 1

input_sequences = []
for i in range(1, len(text.split())):
    n_gram_sequence = text.split()[i:i+1]
    input_sequences.append(" ".join(n_gram_sequence))

max_sequence_len = max([len(seq.split()) for seq in input_sequences])
input_sequences =
pad_sequences(tokenizer.texts_to_sequences(input_sequences),
               maxlen=max_sequence_len,
               padding='pre')

X, y = input_sequences[:, :-1], input_sequences[:, -1]
y = to_categorical(y, num_classes=total_words)

model = Sequential()
model.add(Embedding(total_words, 50, input_length=max_sequence_len-1))
model.add(LSTM(100))
model.add(Dense(total_words, activation='softmax'))
model.compile(loss='categorical_crossentropy', optimizer='adam',
              metrics=['accuracy'])

model.fit(X, y, epochs=100, verbose=1)

def generate_text(seed_text, next_words, model, max_sequence_len):
    for _ in range(next_words):
        token_list = tokenizer.texts_to_sequences([seed_text])[0]
        token_list = pad_sequences([token_list],
                                   maxlen=max_sequence_len-1, padding='pre')
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        predicted = np.argmax(model.predict(token_list), axis=-1)
        output_word = ""
        for word, index in tokenizer.word_index.items():
            if index == predicted:
                output_word = word
                break
        seed_text += " " + output_word
    return seed_text

```

```

generated_text = generate_text("Computer", next_words=20, model=model,
max_sequence_len=max_sequence_len)
print(generated_text)

```

Epoch 1/100

```

1/1 [=====] - ETA: 0s - loss: 3.0901 -
accuracy: 0.0000e+00
1/1 [=====] - 3s 3s/step - loss: 3.0901 -
accuracy: 0.0000e+00

```

Epoch 2/100

```

1/1 [=====] - ETA: 0s - loss: 3.0845 -
accuracy: 0.1429
1/1 [=====] - 0s 0s/step - loss: 3.0845 -
accuracy: 0.1429

```

Epoch 3/100

```

1/1 [=====] - ETA: 0s - loss: 3.0788 -
accuracy: 0.1905
1/1 [=====] - 0s 18ms/step - loss: 3.0788 -
accuracy: 0.1905

```

Epoch 4/100

```

1/1 [=====] - ETA: 0s - loss: 3.0728 -
accuracy: 0.1905
1/1 [=====] - 0s 14ms/step - loss: 3.0728 -
accuracy: 0.1905

```

Epoch 5/100

```

1/1 [=====] - ETA: 0s - loss: 3.0663 -
accuracy: 0.2381
1/1 [=====] - 0s 16ms/step - loss: 3.0663 -
accuracy: 0.2381

```

Epoch 6/100

```

1/1 [=====] - ETA: 0s - loss: 3.0591 -
accuracy: 0.1905
1/1 [=====] - 0s 0s/step - loss: 3.0591 -
accuracy: 0.1905

```

Epoch 7/100

```
1/1 [=====] - ETA: 0s - loss: 3.0510 -  
accuracy: 0.1905  
1/1 [=====] - 0s 16ms/step - loss: 3.0510 -  
accuracy: 0.1905  
Epoch 8/100  
  
1/1 [=====] - ETA: 0s - loss: 3.0417 -  
accuracy: 0.1905  
1/1 [=====] - 0s 16ms/step - loss: 3.0417 -  
accuracy: 0.1905  
Epoch 9/100  
  
1/1 [=====] - ETA: 0s - loss: 3.0307 -  
accuracy: 0.1905  
1/1 [=====] - 0s 15ms/step - loss: 3.0307 -  
accuracy: 0.1905  
Epoch 10/100  
  
1/1 [=====] - ETA: 0s - loss: 3.0175 -  
accuracy: 0.1905  
1/1 [=====] - 0s 16ms/step - loss: 3.0175 -  
accuracy: 0.1905  
Epoch 11/100  
  
1/1 [=====] - ETA: 0s - loss: 3.0011 -  
accuracy: 0.1905  
1/1 [=====] - 0s 19ms/step - loss: 3.0011 -  
accuracy: 0.1905  
Epoch 12/100  
  
1/1 [=====] - ETA: 0s - loss: 2.9806 -  
accuracy: 0.1905  
1/1 [=====] - 0s 11ms/step - loss: 2.9806 -  
accuracy: 0.1905  
Epoch 13/100  
  
1/1 [=====] - ETA: 0s - loss: 2.9546 -  
accuracy: 0.1429  
1/1 [=====] - 0s 16ms/step - loss: 2.9546 -  
accuracy: 0.1429  
Epoch 14/100  
  
1/1 [=====] - ETA: 0s - loss: 2.9220 -  
accuracy: 0.1905  
1/1 [=====] - 0s 0s/step - loss: 2.9220 -  
accuracy: 0.1905  
Epoch 15/100  
  
1/1 [=====] - ETA: 0s - loss: 2.8836 -
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accuracy: 0.1905
1/1 [=====] - 0s 19ms/step - loss: 2.8836 -
accuracy: 0.1905
Epoch 16/100

1/1 [=====] - ETA: 0s - loss: 2.8465 -
accuracy: 0.1905
1/1 [=====] - 0s 14ms/step - loss: 2.8465 -
accuracy: 0.1905
Epoch 17/100

1/1 [=====] - ETA: 0s - loss: 2.8258 -
accuracy: 0.1429
1/1 [=====] - 0s 15ms/step - loss: 2.8258 -
accuracy: 0.1429
Epoch 18/100

1/1 [=====] - ETA: 0s - loss: 2.8135 -
accuracy: 0.1905
1/1 [=====] - 0s 17ms/step - loss: 2.8135 -
accuracy: 0.1905
Epoch 19/100

1/1 [=====] - ETA: 0s - loss: 2.7865 -
accuracy: 0.1429
1/1 [=====] - 0s 16ms/step - loss: 2.7865 -
accuracy: 0.1429
Epoch 20/100

1/1 [=====] - ETA: 0s - loss: 2.7463 -
accuracy: 0.1905
1/1 [=====] - 0s 16ms/step - loss: 2.7463 -
accuracy: 0.1905
Epoch 21/100

1/1 [=====] - ETA: 0s - loss: 2.7007 -
accuracy: 0.1905
1/1 [=====] - 0s 0s/step - loss: 2.7007 -
accuracy: 0.1905
Epoch 22/100

1/1 [=====] - ETA: 0s - loss: 2.6530 -
accuracy: 0.1905
1/1 [=====] - 0s 16ms/step - loss: 2.6530 -
accuracy: 0.1905
Epoch 23/100

1/1 [=====] - ETA: 0s - loss: 2.6041 -
accuracy: 0.1905
1/1 [=====] - 0s 17ms/step - loss: 2.6041 -
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accuracy: 0.1905

Epoch 24/100

1/1 [=====] - ETA: 0s - loss: 2.5564 -

accuracy: 0.1905

1/1 [=====] - 0s 16ms/step - loss: 2.5564 -

accuracy: 0.1905

Epoch 25/100

1/1 [=====] - ETA: 0s - loss: 2.5125 -

accuracy: 0.2381

1/1 [=====] - 0s 16ms/step - loss: 2.5125 -

accuracy: 0.2381

Epoch 26/100

1/1 [=====] - ETA: 0s - loss: 2.4699 -

accuracy: 0.2381

1/1 [=====] - 0s 16ms/step - loss: 2.4699 -

accuracy: 0.2381

Epoch 27/100

1/1 [=====] - ETA: 0s - loss: 2.4296 -

accuracy: 0.2381

1/1 [=====] - 0s 16ms/step - loss: 2.4296 -

accuracy: 0.2381

Epoch 28/100

1/1 [=====] - ETA: 0s - loss: 2.3975 -

accuracy: 0.2381

1/1 [=====] - 0s 16ms/step - loss: 2.3975 -

accuracy: 0.2381

Epoch 29/100

1/1 [=====] - ETA: 0s - loss: 2.3653 -

accuracy: 0.2381

1/1 [=====] - 0s 16ms/step - loss: 2.3653 -

accuracy: 0.2381

Epoch 30/100

1/1 [=====] - ETA: 0s - loss: 2.3293 -

accuracy: 0.2381

1/1 [=====] - 0s 16ms/step - loss: 2.3293 -

accuracy: 0.2381

Epoch 31/100

1/1 [=====] - ETA: 0s - loss: 2.2873 -

accuracy: 0.2381

1/1 [=====] - 0s 16ms/step - loss: 2.2873 -

accuracy: 0.2381

Epoch 32/100

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1/1 [=====] - ETA: 0s - loss: 2.2385 -  
accuracy: 0.2857  
1/1 [=====] - 0s 15ms/step - loss: 2.2385 -  
accuracy: 0.2857  
Epoch 33/100  
  
1/1 [=====] - ETA: 0s - loss: 2.1854 -  
accuracy: 0.2857  
1/1 [=====] - 0s 16ms/step - loss: 2.1854 -  
accuracy: 0.2857  
Epoch 34/100  
  
1/1 [=====] - ETA: 0s - loss: 2.1351 -  
accuracy: 0.2381  
1/1 [=====] - 0s 19ms/step - loss: 2.1351 -  
accuracy: 0.2381  
Epoch 35/100  
  
1/1 [=====] - ETA: 0s - loss: 2.0878 -  
accuracy: 0.2381  
1/1 [=====] - 0s 12ms/step - loss: 2.0878 -  
accuracy: 0.2381  
Epoch 36/100  
  
1/1 [=====] - ETA: 0s - loss: 2.0478 -  
accuracy: 0.3333  
1/1 [=====] - 0s 0s/step - loss: 2.0478 -  
accuracy: 0.3333  
Epoch 37/100  
  
1/1 [=====] - ETA: 0s - loss: 2.0108 -  
accuracy: 0.4286  
1/1 [=====] - 0s 0s/step - loss: 2.0108 -  
accuracy: 0.4286  
Epoch 38/100  
  
1/1 [=====] - ETA: 0s - loss: 1.9775 -  
accuracy: 0.2857  
1/1 [=====] - 0s 16ms/step - loss: 1.9775 -  
accuracy: 0.2857  
Epoch 39/100  
  
1/1 [=====] - ETA: 0s - loss: 1.9392 -  
accuracy: 0.3333  
1/1 [=====] - 0s 17ms/step - loss: 1.9392 -  
accuracy: 0.3333  
Epoch 40/100  
  
1/1 [=====] - ETA: 0s - loss: 1.8991 -
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accuracy: 0.1905
1/1 [=====] - 0s 14ms/step - loss: 1.8991 -
accuracy: 0.1905
Epoch 41/100

1/1 [=====] - ETA: 0s - loss: 1.8397 -
accuracy: 0.2857
1/1 [=====] - 0s 16ms/step - loss: 1.8397 -
accuracy: 0.2857
Epoch 42/100

1/1 [=====] - ETA: 0s - loss: 1.8427 -
accuracy: 0.3333
1/1 [=====] - 0s 16ms/step - loss: 1.8427 -
accuracy: 0.3333
Epoch 43/100

1/1 [=====] - ETA: 0s - loss: 1.7801 -
accuracy: 0.4762
1/1 [=====] - 0s 15ms/step - loss: 1.7801 -
accuracy: 0.4762
Epoch 44/100

1/1 [=====] - ETA: 0s - loss: 1.7639 -
accuracy: 0.4762
1/1 [=====] - 0s 17ms/step - loss: 1.7639 -
accuracy: 0.4762
Epoch 45/100

1/1 [=====] - ETA: 0s - loss: 1.7024 -
accuracy: 0.5238
1/1 [=====] - 0s 15ms/step - loss: 1.7024 -
accuracy: 0.5238
Epoch 46/100

1/1 [=====] - ETA: 0s - loss: 1.7000 -
accuracy: 0.4762
1/1 [=====] - 0s 15ms/step - loss: 1.7000 -
accuracy: 0.4762
Epoch 47/100

1/1 [=====] - ETA: 0s - loss: 1.6447 -
accuracy: 0.5714
1/1 [=====] - 0s 0s/step - loss: 1.6447 -
accuracy: 0.5714
Epoch 48/100

1/1 [=====] - ETA: 0s - loss: 1.6288 -
accuracy: 0.5238
1/1 [=====] - 0s 16ms/step - loss: 1.6288 -
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accuracy: 0.5238

Epoch 49/100

1/1 [=====] - ETA: 0s - loss: 1.5773 -

accuracy: 0.6190

1/1 [=====] - 0s 658us/step - loss: 1.5773 -

accuracy: 0.6190

Epoch 50/100

1/1 [=====] - ETA: 0s - loss: 1.5549 -

accuracy: 0.5714

1/1 [=====] - 0s 16ms/step - loss: 1.5549 -

accuracy: 0.5714

Epoch 51/100

1/1 [=====] - ETA: 0s - loss: 1.5241 -

accuracy: 0.7143

1/1 [=====] - 0s 16ms/step - loss: 1.5241 -

accuracy: 0.7143

Epoch 52/100

1/1 [=====] - ETA: 0s - loss: 1.5005 -

accuracy: 0.7143

1/1 [=====] - 0s 15ms/step - loss: 1.5005 -

accuracy: 0.7143

Epoch 53/100

1/1 [=====] - ETA: 0s - loss: 1.4703 -

accuracy: 0.6190

1/1 [=====] - 0s 16ms/step - loss: 1.4703 -

accuracy: 0.6190

Epoch 54/100

1/1 [=====] - ETA: 0s - loss: 1.4384 -

accuracy: 0.6190

1/1 [=====] - 0s 16ms/step - loss: 1.4384 -

accuracy: 0.6190

Epoch 55/100

1/1 [=====] - ETA: 0s - loss: 1.4178 -

accuracy: 0.6667

1/1 [=====] - 0s 16ms/step - loss: 1.4178 -

accuracy: 0.6667

Epoch 56/100

1/1 [=====] - ETA: 0s - loss: 1.3875 -

accuracy: 0.6667

1/1 [=====] - 0s 16ms/step - loss: 1.3875 -

accuracy: 0.6667

Epoch 57/100


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1/1 [=====] - ETA: 0s - loss: 1.3731 -  
accuracy: 0.6190  
1/1 [=====] - 0s 22ms/step - loss: 1.3731 -  
accuracy: 0.6190  
Epoch 58/100  
  
1/1 [=====] - ETA: 0s - loss: 1.3384 -  
accuracy: 0.7619  
1/1 [=====] - 0s 14ms/step - loss: 1.3384 -  
accuracy: 0.7619  
Epoch 59/100  
  
1/1 [=====] - ETA: 0s - loss: 1.3241 -  
accuracy: 0.7143  
1/1 [=====] - 0s 6ms/step - loss: 1.3241 -  
accuracy: 0.7143  
Epoch 60/100  
  
1/1 [=====] - ETA: 0s - loss: 1.2961 -  
accuracy: 0.7619  
1/1 [=====] - 0s 16ms/step - loss: 1.2961 -  
accuracy: 0.7619  
Epoch 61/100  
  
1/1 [=====] - ETA: 0s - loss: 1.2756 -  
accuracy: 0.8095  
1/1 [=====] - 0s 16ms/step - loss: 1.2756 -  
accuracy: 0.8095  
Epoch 62/100  
  
1/1 [=====] - ETA: 0s - loss: 1.2606 -  
accuracy: 0.8095  
1/1 [=====] - 0s 16ms/step - loss: 1.2606 -  
accuracy: 0.8095  
Epoch 63/100  
  
1/1 [=====] - ETA: 0s - loss: 1.2328 -  
accuracy: 0.8095  
1/1 [=====] - 0s 16ms/step - loss: 1.2328 -  
accuracy: 0.8095  
Epoch 64/100  
  
1/1 [=====] - ETA: 0s - loss: 1.2210 -  
accuracy: 0.7619  
1/1 [=====] - 0s 16ms/step - loss: 1.2210 -  
accuracy: 0.7619  
Epoch 65/100  
  
1/1 [=====] - ETA: 0s - loss: 1.2034 -
```

```
accuracy: 0.8095
1/1 [=====] - 0s 15ms/step - loss: 1.2034 -
accuracy: 0.8095
Epoch 66/100

1/1 [=====] - ETA: 0s - loss: 1.1803 -
accuracy: 0.8095
1/1 [=====] - 0s 16ms/step - loss: 1.1803 -
accuracy: 0.8095
Epoch 67/100

1/1 [=====] - ETA: 0s - loss: 1.1622 -
accuracy: 0.8095
1/1 [=====] - 0s 16ms/step - loss: 1.1622 -
accuracy: 0.8095
Epoch 68/100

1/1 [=====] - ETA: 0s - loss: 1.1525 -
accuracy: 0.8571
1/1 [=====] - 0s 15ms/step - loss: 1.1525 -
accuracy: 0.8571
Epoch 69/100

1/1 [=====] - ETA: 0s - loss: 1.1362 -
accuracy: 0.8571
1/1 [=====] - 0s 16ms/step - loss: 1.1362 -
accuracy: 0.8571
Epoch 70/100

1/1 [=====] - ETA: 0s - loss: 1.1208 -
accuracy: 0.9048
1/1 [=====] - 0s 16ms/step - loss: 1.1208 -
accuracy: 0.9048
Epoch 71/100

1/1 [=====] - ETA: 0s - loss: 1.1007 -
accuracy: 0.9048
1/1 [=====] - 0s 19ms/step - loss: 1.1007 -
accuracy: 0.9048
Epoch 72/100

1/1 [=====] - ETA: 0s - loss: 1.0859 -
accuracy: 0.9048
1/1 [=====] - 0s 14ms/step - loss: 1.0859 -
accuracy: 0.9048
Epoch 73/100

1/1 [=====] - ETA: 0s - loss: 1.0669 -
accuracy: 0.9524
1/1 [=====] - 0s 12ms/step - loss: 1.0669 -
```

accuracy: 0.9524

Epoch 74/100

1/1 [=====] - ETA: 0s - loss: 1.0549 -

accuracy: 0.9524

1/1 [=====] - 0s 15ms/step - loss: 1.0549 -

accuracy: 0.9524

Epoch 75/100

1/1 [=====] - ETA: 0s - loss: 1.0380 -

accuracy: 0.9524

1/1 [=====] - 0s 16ms/step - loss: 1.0380 -

accuracy: 0.9524

Epoch 76/100

1/1 [=====] - ETA: 0s - loss: 1.0304 -

accuracy: 0.9048

1/1 [=====] - 0s 16ms/step - loss: 1.0304 -

accuracy: 0.9048

Epoch 77/100

1/1 [=====] - ETA: 0s - loss: 1.0403 -

accuracy: 0.8571

1/1 [=====] - 0s 16ms/step - loss: 1.0403 -

accuracy: 0.8571

Epoch 78/100

1/1 [=====] - ETA: 0s - loss: 1.1081 -

accuracy: 0.7619

1/1 [=====] - 0s 16ms/step - loss: 1.1081 -

accuracy: 0.7619

Epoch 79/100

1/1 [=====] - ETA: 0s - loss: 1.1984 -

accuracy: 0.5714

1/1 [=====] - 0s 16ms/step - loss: 1.1984 -

accuracy: 0.5714

Epoch 80/100

1/1 [=====] - ETA: 0s - loss: 1.1588 -

accuracy: 0.7619

1/1 [=====] - 0s 16ms/step - loss: 1.1588 -

accuracy: 0.7619

Epoch 81/100

1/1 [=====] - ETA: 0s - loss: 1.0815 -

accuracy: 0.7619

1/1 [=====] - 0s 16ms/step - loss: 1.0815 -

accuracy: 0.7619

Epoch 82/100

```
1/1 [=====] - ETA: 0s - loss: 1.0590 -  
accuracy: 0.8571  
1/1 [=====] - 0s 16ms/step - loss: 1.0590 -  
accuracy: 0.8571  
Epoch 83/100  
  
1/1 [=====] - ETA: 0s - loss: 1.0203 -  
accuracy: 0.7619  
1/1 [=====] - 0s 24ms/step - loss: 1.0203 -  
accuracy: 0.7619  
Epoch 84/100  
  
1/1 [=====] - ETA: 0s - loss: 1.0145 -  
accuracy: 0.7143  
1/1 [=====] - 0s 11ms/step - loss: 1.0145 -  
accuracy: 0.7143  
Epoch 85/100  
  
1/1 [=====] - ETA: 0s - loss: 0.9648 -  
accuracy: 0.9048  
1/1 [=====] - 0s 25ms/step - loss: 0.9648 -  
accuracy: 0.9048  
Epoch 86/100  
  
1/1 [=====] - ETA: 0s - loss: 1.0330 -  
accuracy: 0.7619  
1/1 [=====] - 0s 16ms/step - loss: 1.0330 -  
accuracy: 0.7619  
Epoch 87/100  
  
1/1 [=====] - ETA: 0s - loss: 0.9414 -  
accuracy: 0.9048  
1/1 [=====] - 0s 16ms/step - loss: 0.9414 -  
accuracy: 0.9048  
Epoch 88/100  
  
1/1 [=====] - ETA: 0s - loss: 0.9401 -  
accuracy: 0.9048  
1/1 [=====] - 0s 16ms/step - loss: 0.9401 -  
accuracy: 0.9048  
Epoch 89/100  
  
1/1 [=====] - ETA: 0s - loss: 0.9178 -  
accuracy: 0.9048  
1/1 [=====] - 0s 17ms/step - loss: 0.9178 -  
accuracy: 0.9048  
Epoch 90/100  
  
1/1 [=====] - ETA: 0s - loss: 0.9079 -  
accuracy: 0.9524
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1/1 [=====] - 0s 15ms/step - loss: 0.9079 -
accuracy: 0.9524
Epoch 91/100

1/1 [=====] - ETA: 0s - loss: 0.9246 -
accuracy: 1.0000
1/1 [=====] - 0s 16ms/step - loss: 0.9246 -
accuracy: 1.0000
Epoch 92/100

1/1 [=====] - ETA: 0s - loss: 0.8708 -
accuracy: 1.0000
1/1 [=====] - 0s 16ms/step - loss: 0.8708 -
accuracy: 1.0000
Epoch 93/100

1/1 [=====] - ETA: 0s - loss: 0.8726 -
accuracy: 0.9048
1/1 [=====] - 0s 0s/step - loss: 0.8726 -
accuracy: 0.9048
Epoch 94/100

1/1 [=====] - ETA: 0s - loss: 0.8654 -
accuracy: 0.9048
1/1 [=====] - 0s 15ms/step - loss: 0.8654 -
accuracy: 0.9048
Epoch 95/100

1/1 [=====] - ETA: 0s - loss: 0.8504 -
accuracy: 0.9048
1/1 [=====] - 0s 16ms/step - loss: 0.8504 -
accuracy: 0.9048
Epoch 96/100

1/1 [=====] - ETA: 0s - loss: 0.8463 -
accuracy: 0.8095
1/1 [=====] - 0s 16ms/step - loss: 0.8463 -
accuracy: 0.8095
Epoch 97/100

1/1 [=====] - ETA: 0s - loss: 0.8221 -
accuracy: 0.8571
1/1 [=====] - 0s 15ms/step - loss: 0.8221 -
accuracy: 0.8571
Epoch 98/100

1/1 [=====] - ETA: 0s - loss: 0.8207 -
accuracy: 0.9048
1/1 [=====] - 0s 16ms/step - loss: 0.8207 -
accuracy: 0.9048

Epoch 99/100

1/1 [=====] - ETA: 0s - loss: 0.8146 -
accuracy: 0.9524

1/1 [=====] - 0s 16ms/step - loss: 0.8146 -
accuracy: 0.9524

Epoch 100/100

1/1 [=====] - ETA: 0s - loss: 0.7952 -
accuracy: 1.0000

1/1 [=====] - 0s 0s/step - loss: 0.7952 -
accuracy: 1.0000

1/1 [=====] - ETA: 0s
1/1 [=====] - 1s 706ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 31ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 30ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 32ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 16ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 15ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 32ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 27ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 35ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 25ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 31ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 25ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 27ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 31ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 19ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 16ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 25ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 15ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 32ms/step

1/1 [=====] - ETA: 0s
1/1 [=====] - 0s 33ms/step

Computer intelligence ai is is perceiving synthesizing and inferring
inferring demonstrated by machines as opposed to intelligence
intelligence displayed by humans