```python
import tensorflow as tf
from tensorflow.keras import layers, models
import matplotlib.pyplot as plt

def conv_block(x, filters):
    x = layers.Conv2D(filters, 3, activation='relu', padding='same')
(x)
    x = layers.Conv2D(filters, 3, activation='relu', padding='same')
(x)
    return x

def encoder_block(x, filters):
    f = conv_block(x, filters)
    p = layers.MaxPooling2D((2, 2))(f)
    return f, p

def decoder_block(x, skip, filters):
    x = layers.Conv2DTranspose(filters, (2, 2), strides=2,
padding='same')(x)
    x = layers.concatenate([x, skip])
    x = conv_block(x, filters)
    return x

def build_unet(input_shape):
    inputs = layers.Input(shape=input_shape)

    s1, p1 = encoder_block(inputs, 64)
    s2, p2 = encoder_block(p1, 128)
    s3, p3 = encoder_block(p2, 256)

    b1 = conv_block(p3, 512)

    d1 = decoder_block(b1, s3, 256)
    d2 = decoder_block(d1, s2, 128)
    d3 = decoder_block(d2, s1, 64)

    outputs = layers.Conv2D(1, 1, activation='sigmoid')(d3)

    model = models.Model(inputs, outputs)
    return model

# Inicjalizacja modelu
model = build_unet((256, 256, 3))
model.compile(optimizer='adam', loss='binary_crossentropy',
metrics=['accuracy'])
model.summary()
```

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Model: "functional"
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━━━━━┓
```

Layer (type)	Output Shape	Param #	Connected to
input_layer (InputLayer)	(None, 256, 256, 3)	0	-
conv2d (Conv2D)	(None, 256, 256, 64)	1,792	input_layer[0][0]
conv2d_1 (Conv2D)	(None, 256, 256, 64)	36,928	conv2d[0][0]
max_pooling2d (MaxPooling2D)	(None, 128, 128, 64)	0	conv2d_1[0][0]
conv2d_2 (Conv2D)	(None, 128, 128, 128)	73,856	max_pooling2d[0]…
conv2d_3 (Conv2D)	(None, 128, 128, 128)	147,584	conv2d_2[0][0]
max_pooling2d_1 (MaxPooling2D)	(None, 64, 64, 128)	0	conv2d_3[0][0]
conv2d_4 (Conv2D)	(None, 64, 64, 256)	295,168	max_pooling2d_1[…

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│
├─────────────────────┼───────────────────┼────────────┼──────────────
───────┤
│ conv2d_5 (Conv2D)   │ (None, 64, 64,    │    590,080 │ conv2d_4[0]
[0]     │
│                     │ 256)              │            │
│
├─────────────────────┼───────────────────┼────────────┼──────────────
───────┤
│ max_pooling2d_2     │ (None, 32, 32,    │          0 │ conv2d_5[0]
[0]     │
│ (MaxPooling2D)      │ 256)              │            │
│
├─────────────────────┼───────────────────┼────────────┼──────────────
───────┤
│ conv2d_6 (Conv2D)   │ (None, 32, 32,    │  1,180,160 │
max_pooling2d_2[… │
│                     │ 512)              │            │
│
├─────────────────────┼───────────────────┼────────────┼──────────────
───────┤
│ conv2d_7 (Conv2D)   │ (None, 32, 32,    │  2,359,808 │ conv2d_6[0]
[0]     │
│                     │ 512)              │            │
│
├─────────────────────┼───────────────────┼────────────┼──────────────
───────┤
│ conv2d_transpose    │ (None, 64, 64,    │    524,544 │ conv2d_7[0]
[0]     │
│ (Conv2DTranspose)   │ 256)              │            │
│
├─────────────────────┼───────────────────┼────────────┼──────────────
───────┤
│ concatenate         │ (None, 64, 64,    │          0 │
conv2d_transpose… │
│ (Concatenate)       │ 512)              │            │ conv2d_5[0]
[0]     │
├─────────────────────┼───────────────────┼────────────┼──────────────
───────┤
│ conv2d_8 (Conv2D)   │ (None, 64, 64,    │  1,179,904 │
concatenate[0][0] │
│                     │ 256)              │            │
│
├─────────────────────┼───────────────────┼────────────┼──────────────
───────┤
│ conv2d_9 (Conv2D)   │ (None, 64, 64,    │    590,080 │ conv2d_8[0]
[0]     │
│                     │ 256)              │            │
│
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├──────────────────────┼──────────────────────┼──────────────┼──────────────────
──────┤
│ conv2d_transpose_1   │ (None, 128, 128,   │    131,200 │ conv2d_9[0]
[0]    │
│ (Conv2DTranspose)    │ 128)               │            │
│
├──────────────────────┼──────────────────────┼──────────────┼──────────────────
──────┤
│ concatenate_1        │ (None, 128, 128,   │          0 │
conv2d_transpose… │
│ (Concatenate)        │ 256)               │            │ conv2d_3[0]
[0]    │
├──────────────────────┼──────────────────────┼──────────────┼──────────────────
──────┤
│ conv2d_10 (Conv2D)   │ (None, 128, 128,   │    295,040 │
concatenate_1[0]… │
│                      │ 128)               │            │
│
├──────────────────────┼──────────────────────┼──────────────┼──────────────────
──────┤
│ conv2d_11 (Conv2D)   │ (None, 128, 128,   │    147,584 │ conv2d_10[0]
[0]    │
│                      │ 128)               │            │
│
├──────────────────────┼──────────────────────┼──────────────┼──────────────────
──────┤
│ conv2d_transpose_2   │ (None, 256, 256,   │     32,832 │ conv2d_11[0]
[0]    │
│ (Conv2DTranspose)    │ 64)                │            │
│
├──────────────────────┼──────────────────────┼──────────────┼──────────────────
──────┤
│ concatenate_2        │ (None, 256, 256,   │          0 │
conv2d_transpose… │
│ (Concatenate)        │ 128)               │            │ conv2d_1[0]
[0]    │
├──────────────────────┼──────────────────────┼──────────────┼──────────────────
──────┤
│ conv2d_12 (Conv2D)   │ (None, 256, 256,   │     73,792 │
concatenate_2[0]… │
│                      │ 64)                │            │
│
├──────────────────────┼──────────────────────┼──────────────┼──────────────────
──────┤
│ conv2d_13 (Conv2D)   │ (None, 256, 256,   │     36,928 │ conv2d_12[0]
[0]    │
│                      │ 64)                │            │
│
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──────┤
| conv2d_14 (Conv2D)  | (None, 256, 256,  |          65 | conv2d_13[0]
[0]   |
|                     | 1)                |             |
|
└─────────────────────┴───────────────────┴─────────────┴──────────────────
──────┘

 Total params: 7,697,345 (29.36 MB)

 Trainable params: 7,697,345 (29.36 MB)

 Non-trainable params: 0 (0.00 B)
```