به نام خدا



## دانشگاه اصفهان

## دانشکده مهندسی کامپیوتر

## مباحث ویژه

Heartbeat Classification

## پدیدآورندگان:

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۴۰۰۳۶۱۳۰۵۶

## استاد:

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**Video: [Link](#)**

**Codes: [Link](#)**

**PTH ptbdb: [Link](#)**

**PTH mitbih: [Link](#)**
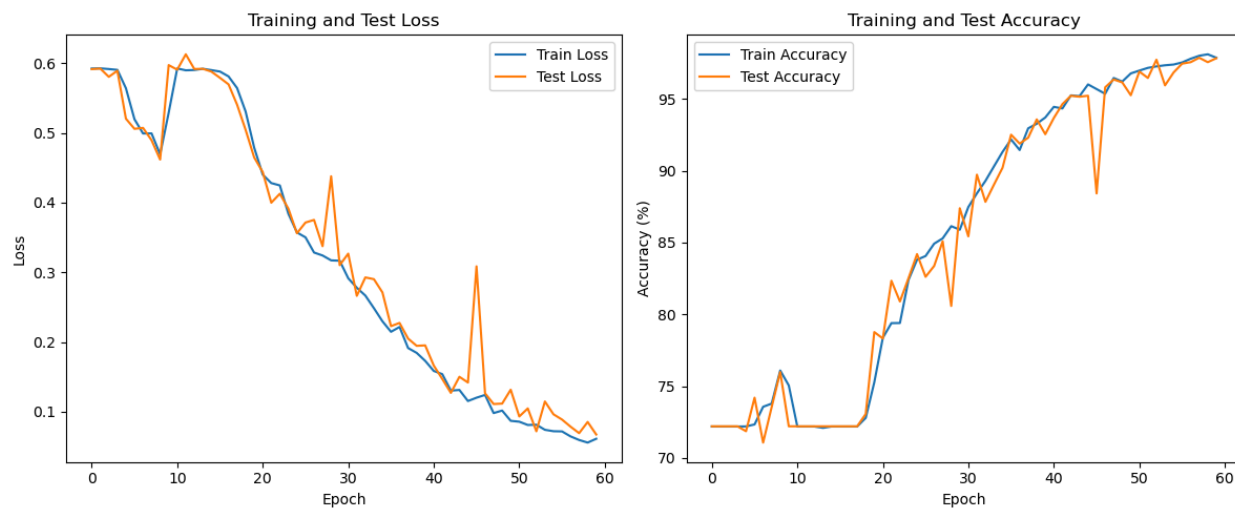
## System Specifications

Gpu: RTX 4050

Cpu: Intel 12700-H

Ram: 16G DDR4

# ptbdb (2-Class, 60-Epochs):

Training Time: 2m 25s



## Number of each class

Normal Data:     4046

Abnormal Data: 10506

## Loss & Acc Last Epoch

Train Loss: 0.0614 | Train Acc: 97.87%

Test Loss:  0.0675 | Test Acc:  97.84%

# Classification Report

| Class | Precision | Recall | F1-Score | Support |
|---|---|---|---|---|
| Normal | 0.9698 | 0.9518 | 0.9607 | 809.0 |
| Abnormal | 0.9816 | 0.9886 | 0.9851 | 2102.0 |

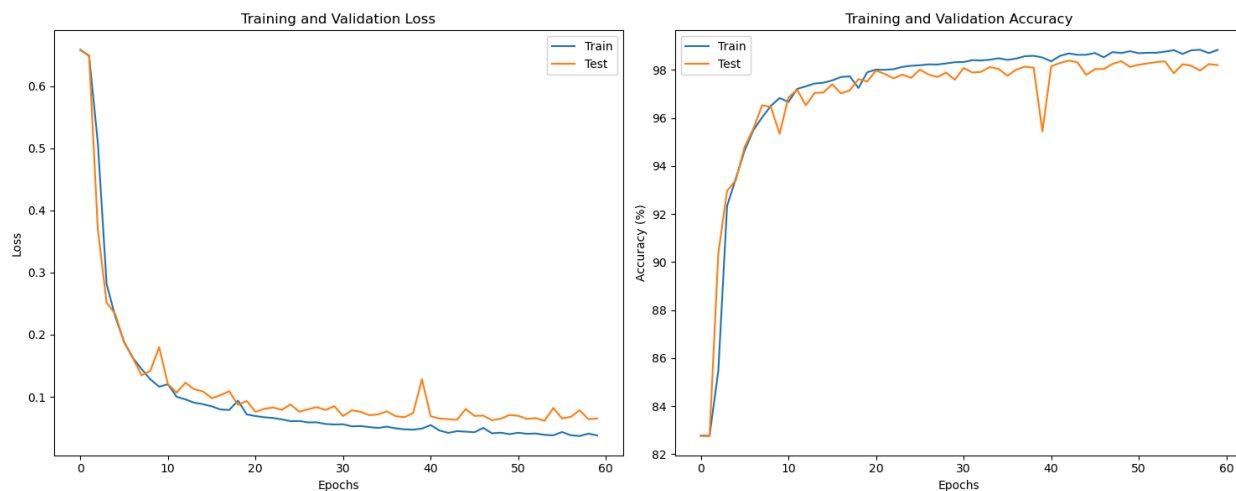# Weighted Averages

| | |
|---|---|
| Precision | 0.9783 |
| Recall | 0.9784 |
| F1-Score | 0.9783 |

# mitbih (5-Class, 60-Epochs):

Training Time: 7m 33s



## Number of each class

Class 0: 90589 (82.77%)

Class 1: 2779 (2.54%)

Class 2: 7236 (6.61%)

Class 3: 803 (0.73%)

Class 4: 8039 (7.35%)

## Loss & Acc Last Epoch

Train Loss: 0.0379 | Acc: 98.83%

Test Loss:  0.0651 | Acc:  98.20%

# Classification Report

| Class | Precision | Recall | F1-Score | Support |
|-------|-----------|--------|----------|---------|
| 0 | 0.9856 | 0.9964 | 0.9910 | 18118.0 |
| 1 | 0.9145 | 0.7122 | 0.8008 | 556.0 |
| 2 | 0.9545 | 0.9420 | 0.9482 | 1448.0 |
| 3 | 0.8333 | 0.6790 | 0.7483 | 162.0 |
| 4 | 0.9956 | 0.9801 | 0.9878 | 1608.0 |

# Weighted Averages

Precision  0.9814

Recall     0.9820

F1-Score   0.9813