HANOI UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF ELECTRICAL & ELECTRONIC ENGINEERING



FINAL REPORT

SUBJECT: ADVANCED SIGNAL PROCESSING

TOPIC: ADAPTIVE FILTER FOR NOISE CANCELLATION APPLICATION

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# Introduction

# Adaptive filter overview

## Weiner filter

### Weiner linear filter

### Weiner-Hopf equation

## Adaptive filter

### Adaptive filter structure

#### FIR linear filter

#### Lattice filter

### Adaptive filter algorithm

#### Least Mean Square

Method of Stochastic Gradient Descent

#### Normalize Least Mean Square

#### Recursive Least Square

### Adaptive filter application

#### Adaptive filter noise cancellation application

#### Signal and noise model

#### Evaluation parameter

# Experiments

## Experiment 1:

## Experiment 2:

## Experiment 3:

## Experiment 4:

# Conclusion