

## Lab: Writing a Paper Using Overleaf and the IEEE Template

### Objective:

This practice assignment will guide you step by step in using Overleaf and the IEEE template to write a structured document that includes a title, author details, body content, a formula, a table, and a reference.

### Instructions

#### Step 1: Create an Overleaf Account

1. Go to [Overleaf](#) and sign up (if you don't have an account).
2. Once logged in, click on "New Project" → "Example Project" to explore Overleaf if you're new to LaTeX.

#### Step 2: Use the IEEE Template

1. Click "New Project" → "IEEE Template" (or import it from IEEE Overleaf Templates).
2. Open the **main.tex** file and locate the sections where you will edit the content.

#### Step 3: Add Title and Author Information

Modify the following section in main.tex to include your details:

```
\title{Your Paper Title Here}
\author{\IEEEauthorblockN{Your Name}
\IEEEauthorblockA{Your Institution \\\ Your Email}}
\maketitle
```

#### Step 4: Write the Body Content

Replace the sample text in the abstract and introduction sections with your own content.

```
\begin{abstract}
This document is a practice assignment for learning how to use Overleaf with the IEEE template
\end{abstract}

\section{Introduction}
Overleaf is an online LaTeX editor that helps users write academic papers efficiently. This de
```

#### Step 5: Insert a Formula

In your paper, insert a simple mathematical formula using LaTeX's equation environment:

```
\section{Mathematical Expression}
```

A common equation in AI is the loss function for linear regression:

```
\begin{equation}
```

```
J(\theta) = \frac{1}{2m} \sum_{i=1}^m (h_{\theta}(x_i) - y_i)^2
```

```
\end{equation}
```

A common equation in machine learning is the loss function for linear regression:

$$J(\theta) = \frac{1}{2m} \sum_{i=1}^m (h_{\theta}(x_i) - y_i)^2$$

## Step 6: Insert a Table

Include a basic table in your paper as follows:

```
\section{Example Table}
```

Table \ref{table:example} shows sample data.

```
\begin{table}[h]
```

```
\centering
```

```
\caption{Sample Data Table}
```

```
\label{table:example}
```

```
\begin{tabular}{|c|c|c|}
```

```
\hline
```

```
ID & Name & Score \\\
```

```
\hline
```

```
1 & Alice & 85 \\\
```

```
2 & Bob & 90 \\\
```

```
3 & Charlie & 78 \\\
```

```
\hline
```

```
\end{tabular}
```

```
\end{table}
```

Table 1 presents sample student scores.

Table 1: Sample Data Table

ID	Name	Score
1	Alice	85
2	Bob	90
3	Charlie	78

Step 7: Add a Reference

At the end of your document, include a reference using IEEE citation style:

1. Add this in your paper where you want to cite the reference:

```
As discussed in previous research \cite{IEEEexample}, machine learning plays a crucial role i
```