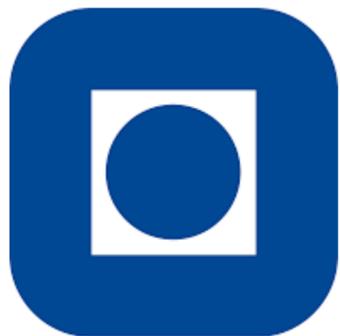


# Handwritten Signature and Text based User Verification using Smartwatch

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# Introduction

- ◆ Evolving technologies - Wearable devices
- ◆ Wrist Wearables are widely used in several applications including user verification.
- ◆ User verification based on handwritten text and signature is an attractive applications.
- ◆ Not many works - early stage of research



# Objective

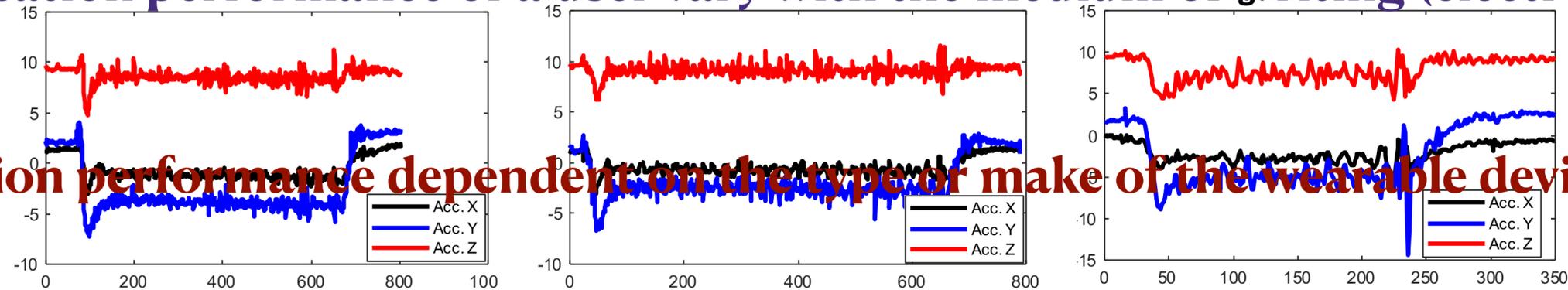
## Research Questions

**Q1: Does the verification performance of a user vary with the medium of writing (electronic tablet or paper)?**

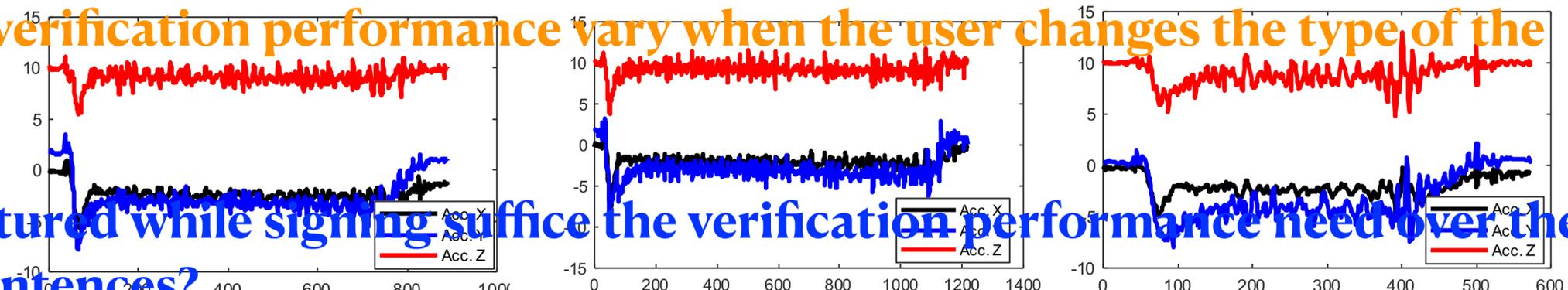
**Q2: Is the verification performance dependent on the type or make of the wearable device (or smartwatch)?**

**Q3: Does the user verification performance vary when the user changes the type of the smartwatch?**

**Q4: Does data captured while signing suffice the verification performance need over the free writing of short sentences?**

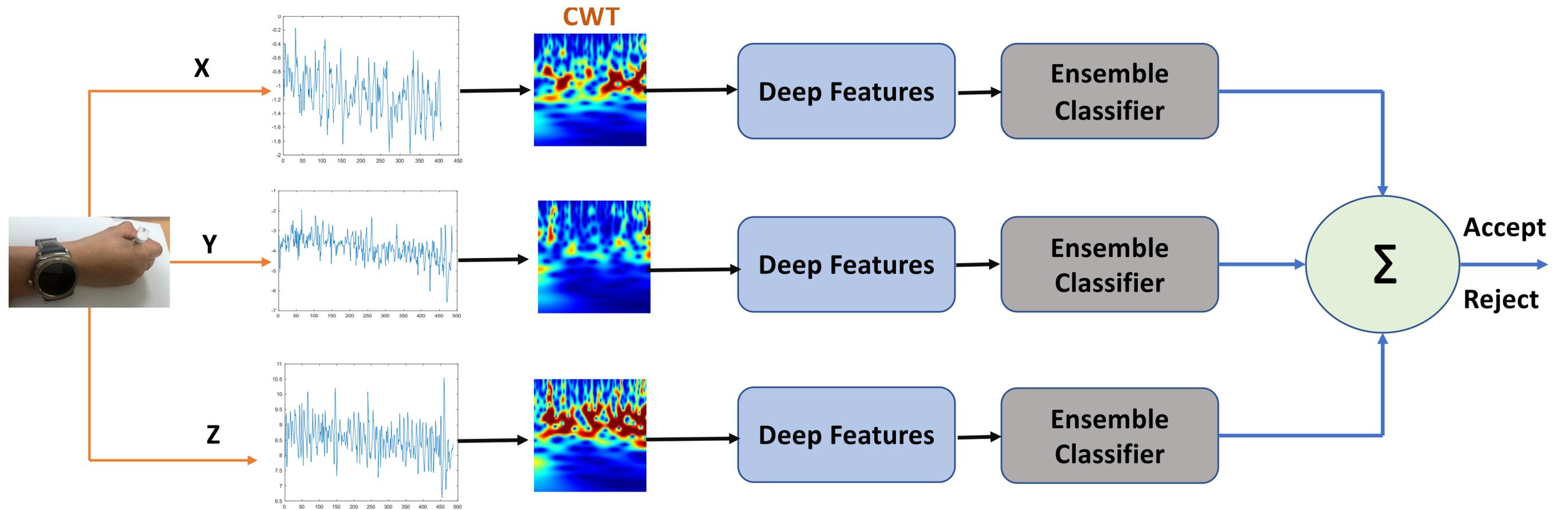


(a)



(b)

# Proposed Method



# Results

Algorithm	Data type	Writing Mode	EER
CNN-BiLSTM [4]	Own	iPAD	7.67
	Sentence	Paper	6.67
	Common	iPAD	9.36
	Sentence	Paper	6.14
	Signature	iPAD	6.72
		Paper	3.33
Proposed Method	Own	iPAD	0
	Sentence	Paper	0
	Common	iPAD	0
	Sentence	Paper	0
	Signature	iPAD	0
		Paper	0

**Performance of Smartwatch-1**

Algorithm	Data type	Writing Mode	EER
CNN-BiLSTM [4]	Own	iPAD	6.67
	Sentence	Paper	3.33
	Common	iPAD	10
	Sentence	Paper	3.33
	Signature	iPAD	3.33
		Paper	1.78
Proposed Method	Own	iPAD	0
	Sentence	Paper	0
	Common	iPAD	0
	Sentence	Paper	0
	Signature	iPAD	0
		Paper	0

**Performance of Smartwatch-2**