**Summary of the 1stmeeting**

Present persons:

Henrique Koji Miyamoto

Prof. sheng Yang

Chaima Bhouri

Sirine Khlifi

Rihab Hsairi

Tasks carried out during the meeting:

* Reminder: As a first step to acknowledge our project *“Universal decoding: optimal detection for unknown channels “*, Henrique assigned us, in the previous meeting, the reading of the article “universal decoding for finite channels “in order to have a general concept of the basic elements and information needed to conduct the project.
* The students pointed out what they didn’t understand in the article and asked questions.
* As a consequence of the responses to all the questions by both Prof. Yang and Henrique, they understood better the preliminaries of universal decoding.

Tasks to be carried out for the next meeting:

1. Implementing the 4 decoding algorithms:

• MMI

• ZIV

• Baseline (2 steps: pilot+data)

• Genie-aided

1. make a comparison between them.

**Summary of the 2ndmeeting**

Present persons:

Henrique Koji Miyamoto

Chaima Bhouri

Sirine Khlifi

Rihab Hsairi

Tasks carried out during the meeting:

* Each of the students displayed their work, and the codebook they chose and tried to explain the process behind the final code: Rihab implemented the MMI and Genie-aided decoders, Chaima implemented the ZIV decoder, and Sirine implemented the Baseline decoder.
* Henrique pointed out that the implementation of the algorithms must not be in general and must apply to the universal decoding for a memoryless noisy channel.
* He also pointed out that we should start by choosing a specific codebook, encoding our message, sending it through a memoryless noisy channel then working on the decoding process using the 4 latest algorithms.

Tasks to be carried out for the next meeting:

1. Choosing a specific codebook.
2. Encoding our source message.
3. Sending it through a memoryless noisy channel.
4. Won the decoding process using the maximum likelihood decoder as a start.

**Summary of the 3rdmeeting**

Present persons:

Henrique Koji Miyamoto

Chaima Bhouri

Sirine Khlifi

Rihab Hsairi

Tasks carried out during the meeting:

• Displaying the work based on remarks of the previous meeting.

• The displaying of the word file in which each one put the introduction of a decoder (definition, principle, and implementation).

• Henrique pointed out that we should use a convolutional code which just contain a subset of possible codewords.

• He also pointed out that we should implement a function that takes as arguments the input sequence and the cross over probability and return a same length sequence.

Tasks to be carried out for the next meeting:

1. Choosing a convolutional codebook

2. Implementing the function that return the y-sequence.

**Summary of the 5thmeeting**

Present persons:

Henrique Koji Miyamoto

Chaima Bhouri

Tasks carried out during the meeting:

* Chaima and Henrique discussed the process of creation of a convolution code using the polynomial method and the definition and tried to understand the reason behind the odd results.
* Chaima displayed the codebook composed of 8 codewords of length 15bits generated by an input message of length 3bits.

Tasks to be carried out for the next meeting:

* Digging through some reading materials