


TEAM 51:
Bhoomika Agarwal
Sreekumar T
Ramesh M
Sowmya R

GUIDE:
Ms. Saraswathi R. Punagin

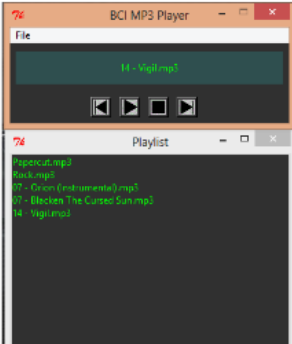
ACKNOWLEDGEMENT:
Dr. Snehanshu Saha



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BCI-Operated Media Player




Problem Statement

- Design a system that allows people with severe motor disability to communicate with computers in real time.
- This system should be able to scale up to multiple dimensions effectively.
- The developed system must be cost effective and easy to use

Results Achieved

- Processing accuracy of 94% was achieved
- Created a media player that can be controlled using inputs from BCI using offline data sets and testing inputs
- Designed a regular expression to validate affecting inputs



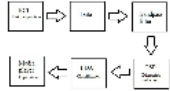
Future Scope

- Increase accuracy of processing
- Scale to more functions for the media player
- Extend the same paradigm to other software

I think therefore I am.

Our Approach

Data flow



What's different?


ADVANTAGES	APPLICATIONS
<ul style="list-style-type: none">• Easy to use• High performance and reliability• Simplified hardware and software• Efficient means of communication with the computer system• Does not require much training of the user before usage	<ul style="list-style-type: none">• Can be used as a proof of concept for software applications with multiple dimensions and functions• Provides a tool for users to control a media player through their brain signals

Thank You!

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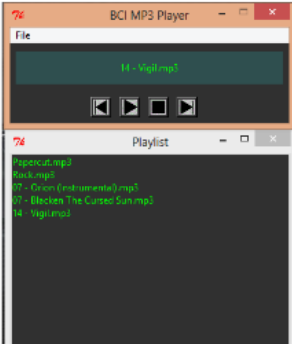
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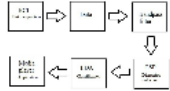
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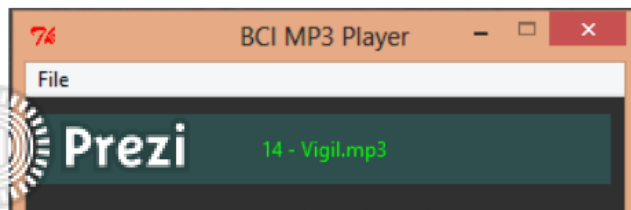


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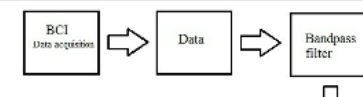


Problem Statement

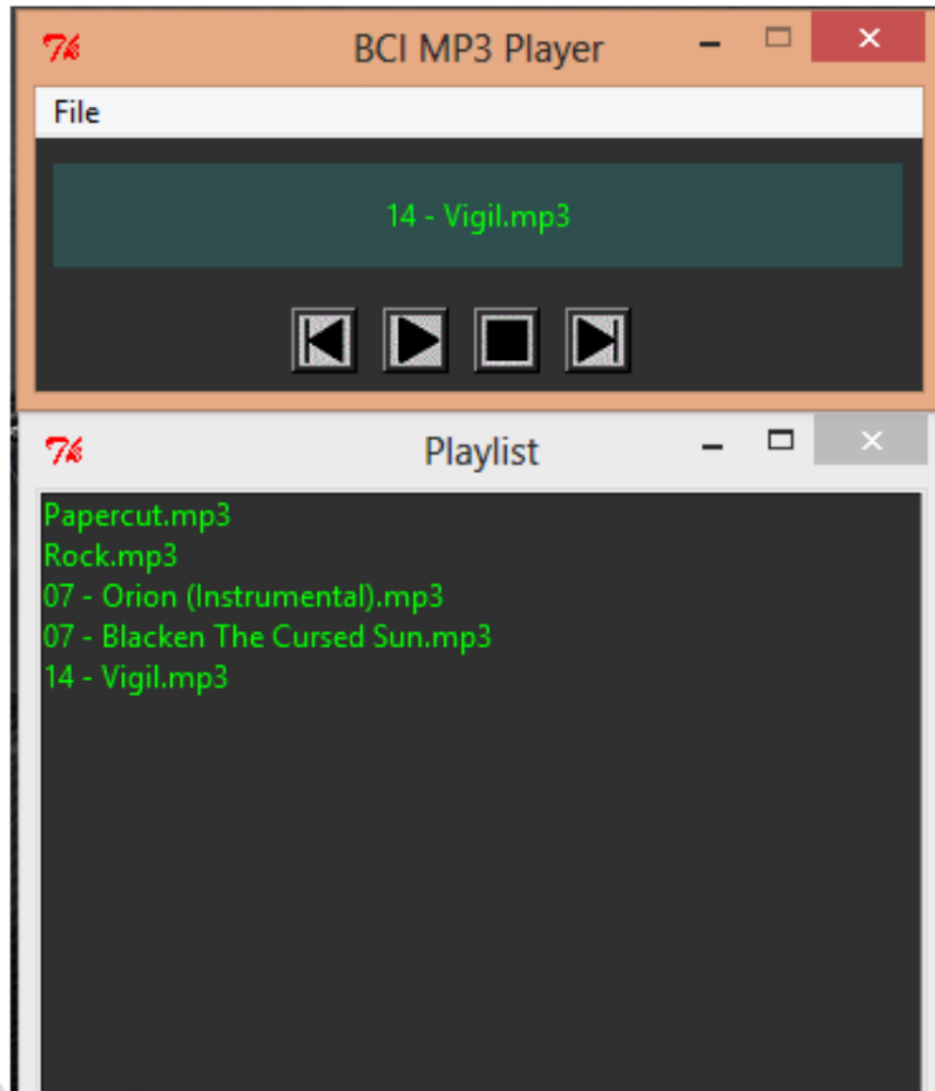
- Design a system that allows people with severe motor

“ I think therefore I am. ”

Our Approach Data flow



BCI-Operated Media Player



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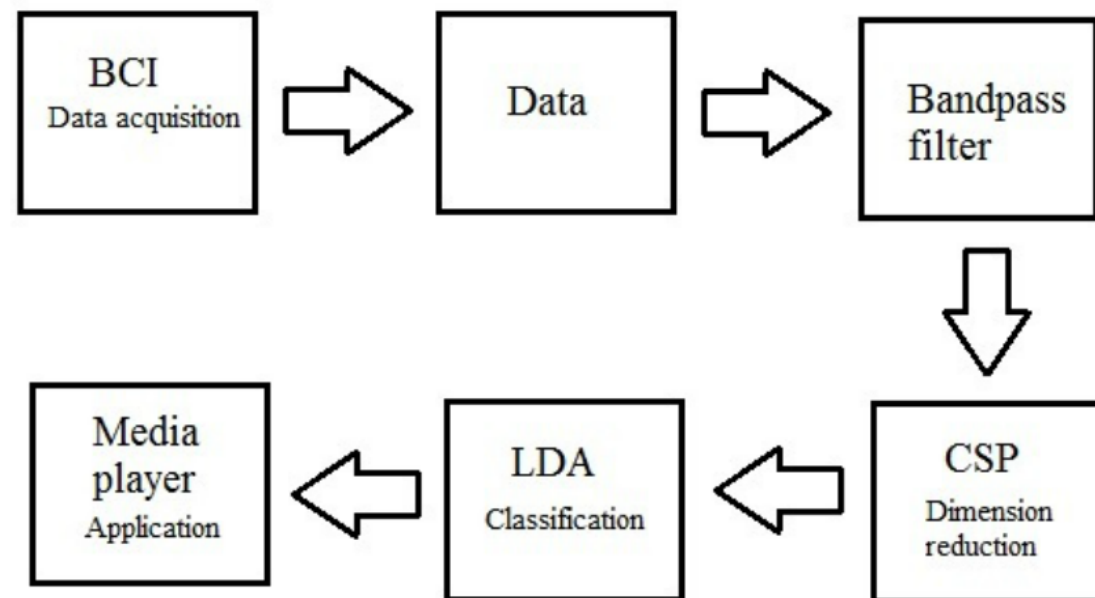
I think therefore I am.

Our Approach
Data flow



Our Approach

Data flow



What's different?

ADVANTAGES

- Easily scalable
- High performance and reliability
- Simplified hardware and software
- Efficient means of communication with the computer system
- Does not require much training of the user before usage

APPLICATIONS

- Can be used as a proof of concept for software applications with multiple dimensions and functions
- Provides a tool for users to control a media player through their brain signals

Results Achieved

- **Processing accuracy of 74% was achieved**
- **Created a media player that can be operated using inputs from BCI using offline data sets and string inputs**
- **Designed a regular expression to validate all string inputs**

```
C:\Users>python hei_final.py
true labels
[[0 0 0 1 1 0 1 1 0 1 0 0 1 1 0 1 1 1 1 1 0 1 1 0 0 0 0 0 1 1 1 1 1 1 0 0 0 0
  0 1 1 0 1 1 1 1 0 1 0 0 1 1 1 1 0 1 1 1 0 1 1 1 0 1 1 0 1 1 0 1 1 0 1 1 0
  0 1 0 1 1 0 0 0 1 1 1 1 0 1 0 0 1 0 0 0 1 0 0 0 1 0 1 0 1 0 1 0 1 0 1 1 0
  0 1 0 1 1 1 1 1 1 0 1 0 1 0 1 1 1 0 1 0 0 1 0 1 1 0 1 0 1 1 0 1 1 0 1 1 0]]
WARNING:gmnn.nisc.apply_csp is deprecated since version 1.1. Please use apply_sp
WARNING:gmnn.nisc.apply_csp is deprecated since version 1.1. Please use apply_sp
actual filter instead.
generated labels
[[0. 0. 1. 0. 1. 1. 0. 1. 1. 1. 1. 0. 1. 0. 0. 1. 0. 0. 0. 0. 0. 1.
  1. 0. 1. 0. 1. 0. 0. 1. 0. 0. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.
  0. 1. 1. 0. 0. 1. 1. 1. 0. 0. 0. 0. 0. 0. 1. 0. 0. 0. 0. 0. 0.
  1. 0. 1. 0. 1. 1. 0. 0. 0. 1. 0. 1. 0. 1. 1. 0. 1. 1. 0. 1.
  1. 0. 0. 1. 1. 1. 0. 1. 0. 1. 0. 1. 0. 0. 1. 1. 0. 1. 0.
  1. 1. 0. 0. 1. 0. 0. 0. 0. 0. 1. 0. 0. 0. 1. 0. 1. 0. 1.
  1. 1. 0. 0. 1. 0. 0. 1. 0. 0. 1. 1. 1. 0. 1. 0. 1. 1.
  1. 0. 0. 1. 1. 1. 0. 0. 0. 0. 0. 1. 1. 1.]]
LDA accuracy 0.74%
```

```

C:\Users\sreekumar\Desktop\project>python gui_final.py 01
Input String : 01

00 Play Previous
01 Play
10 Stop
11 Play Next

Input String : 01

Current input : 01 <play current>
Now Playing : Bee Gees - Stayin' Alive.mp3

00 Play Previous
01 Play
10 Stop
11 Play Next

user input EOL
enter new input:

```

Future Scope


- **Increase accuracy of processing**
- **Scale to more functions for the media player**
- **Extend the same paradigm to other software**

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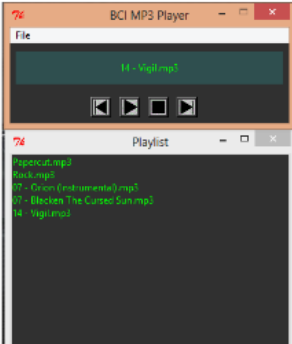
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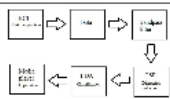
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