Final Year Project
2017-2018
Group 31

SSVEP Classification

- Guide: Mrs. Vidya T V
  Assistant Professor, PESIT-BSC

- Prashanth H C
  1PE14EC099
- Pavan kumar D
  1PE14EC094
- Sawan Singh Mahara
  1PE14EC128
- Lakshmiraj
  1PE14EC412

PROBLEM DEFINITION

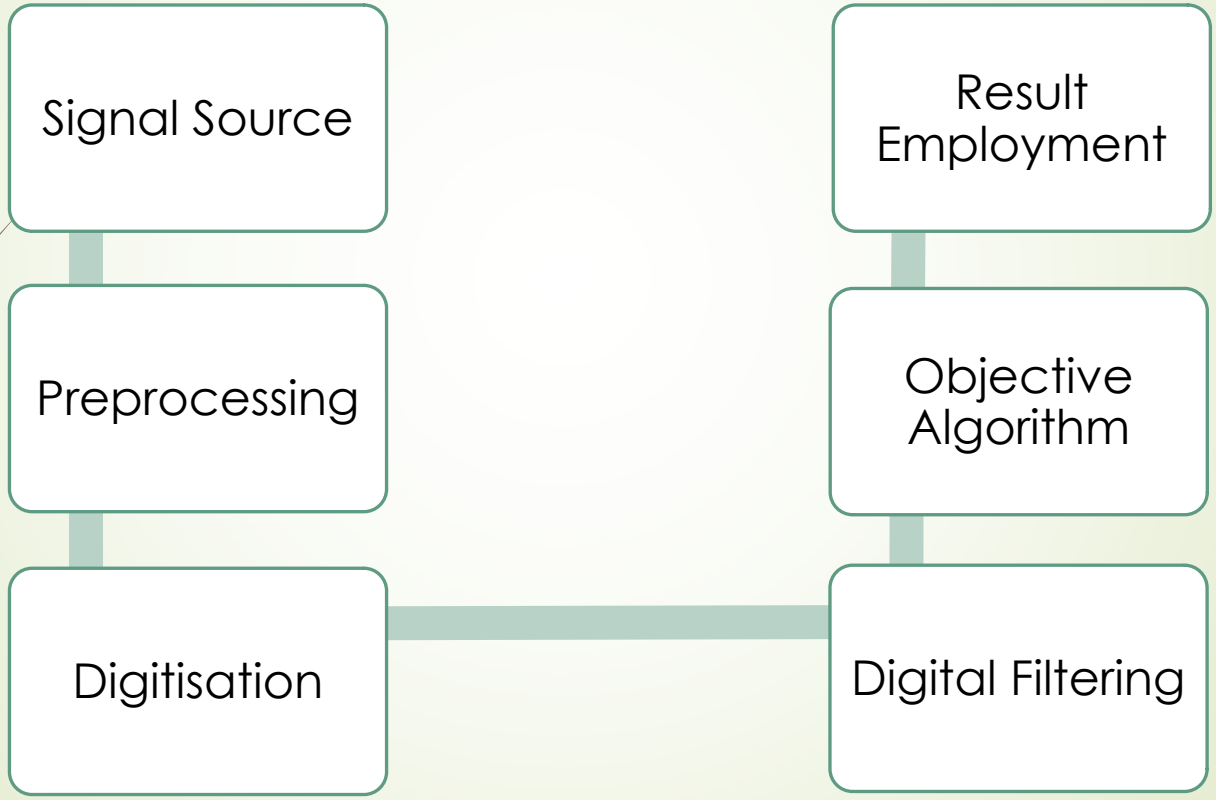
Classifying EEG signals from SSVEP using statistical approaches.

- Understanding the stages of standard BCI systems.
- Exploring known SSVEP classification algorithms.
- Namely CCA, Riemannian manifold approaches.

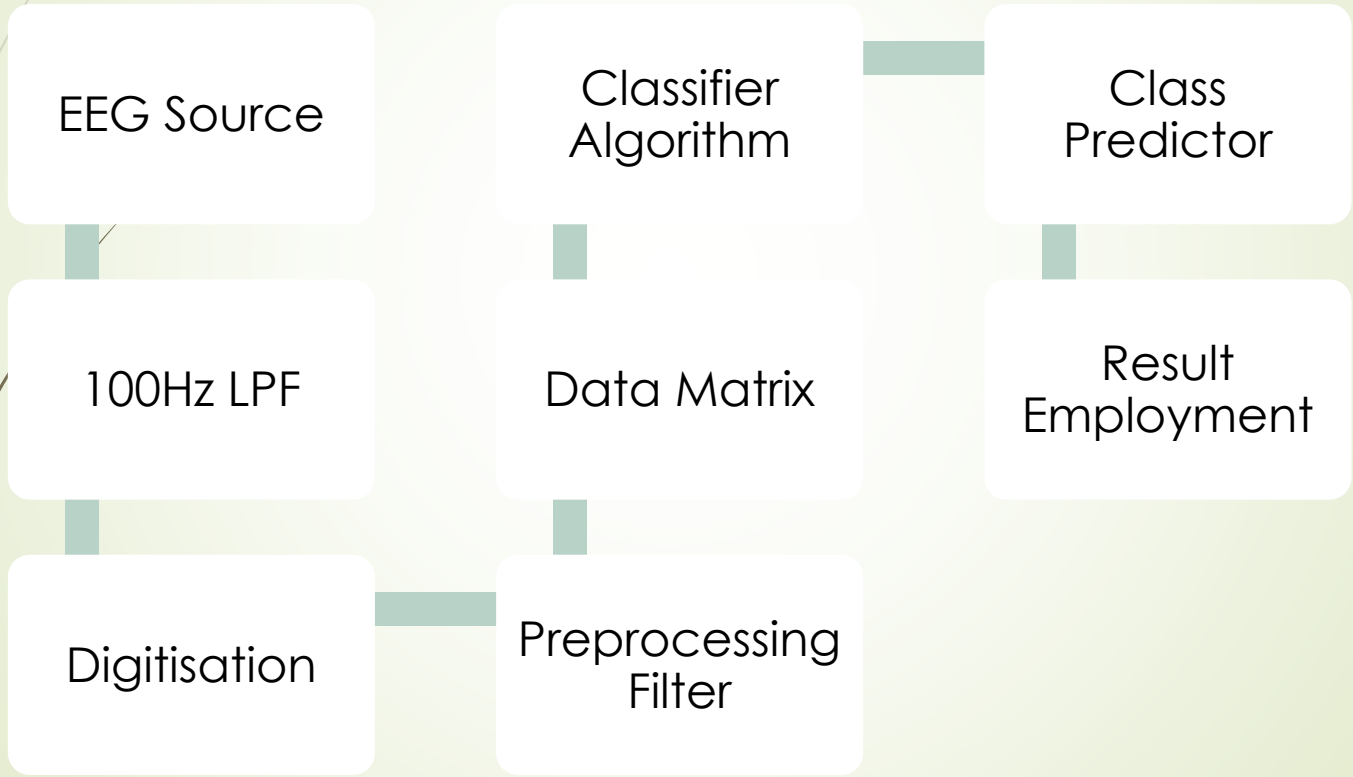
Prerequisites

- Linear Algebra
- Digital Signal Processing
- Biomedical Signals
- Time frequency Analysis

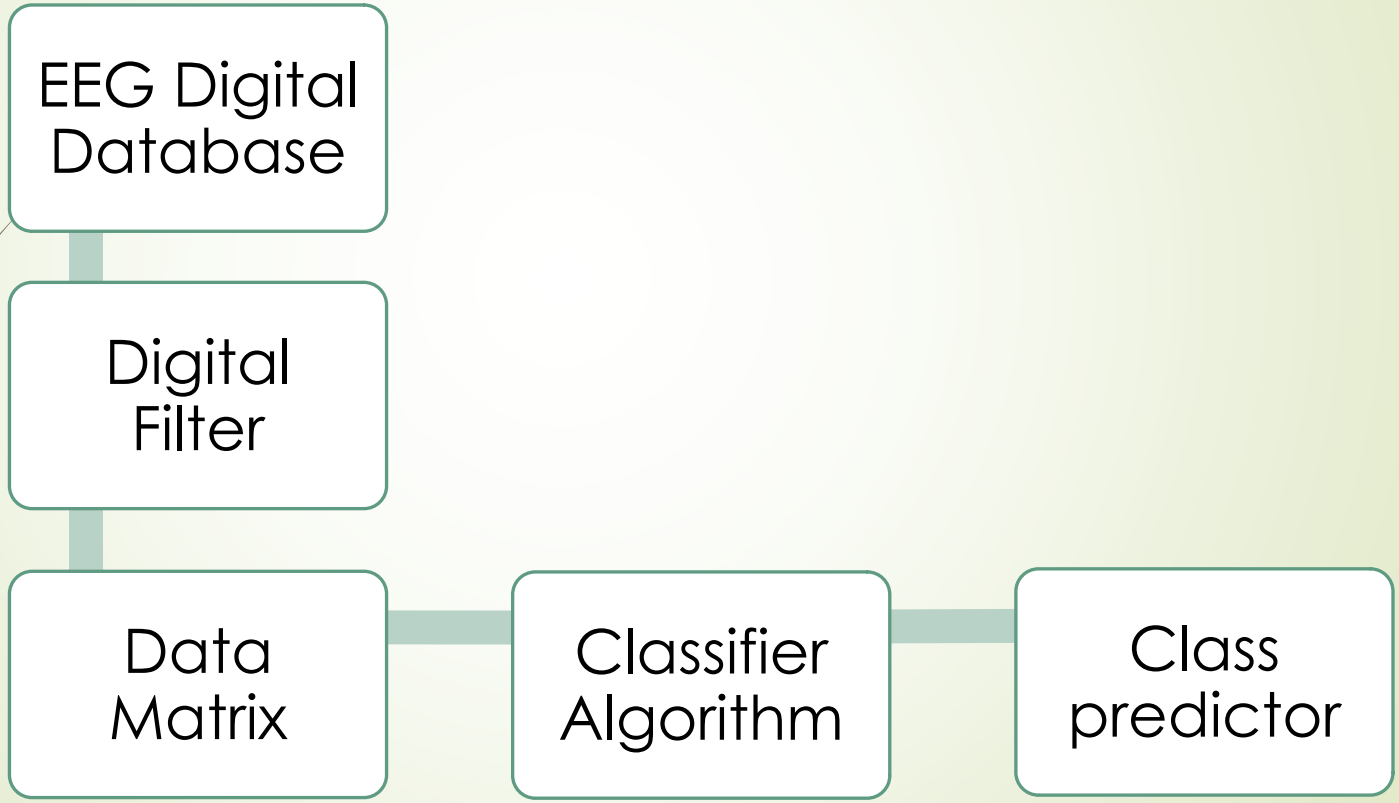
Digital Signal Processing



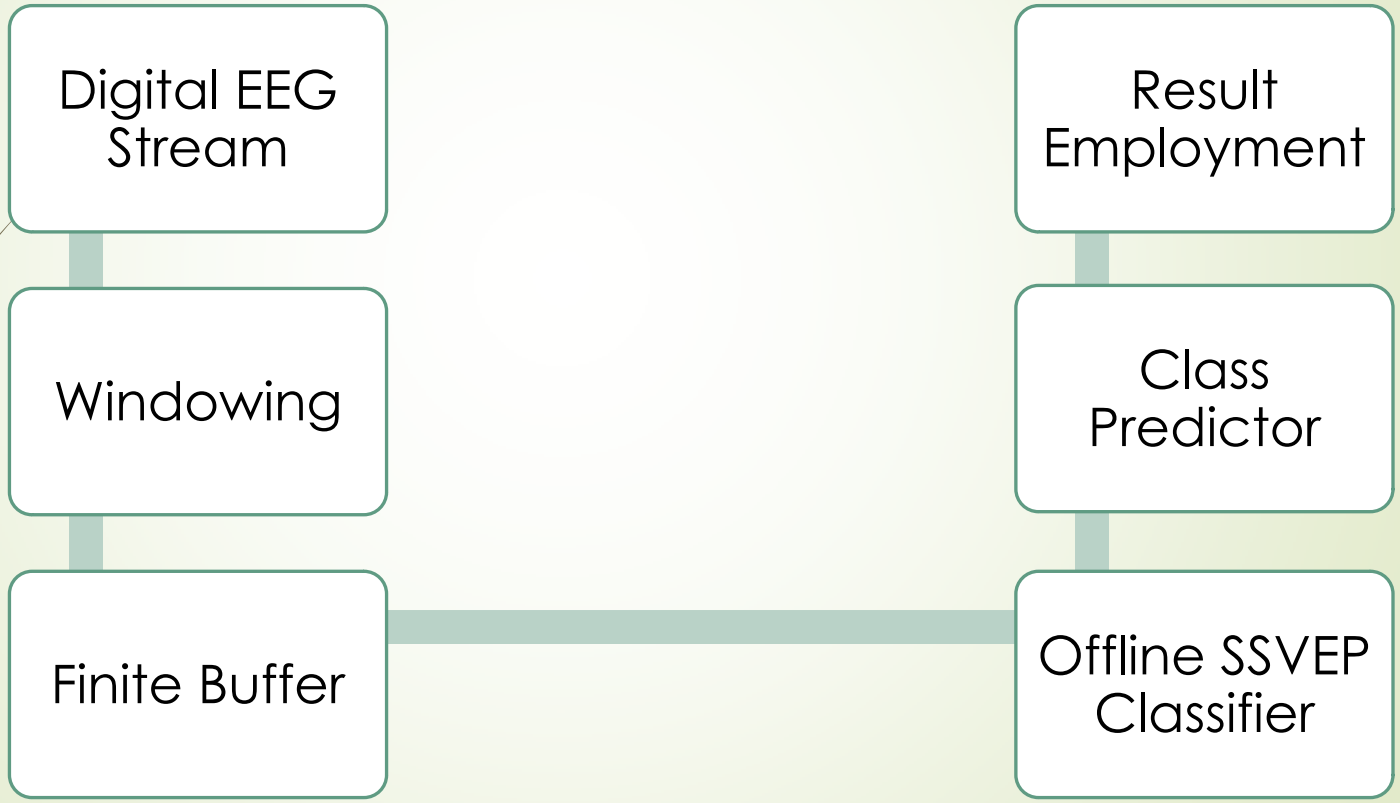
SSVEP Processing



Offline SSVEP Classification



Online SSVEP Classification



Project Plan

SEP
- Literature Study
- Algorithm Study

OCT
- Implementation

FEB
- Verification with Database

MAR
- Performance characterisation of contrived code

APR
- Testing the code with new datasets

References

- [1] M. Congedo, A. Barachant, A. Andreev, A new generation of brain–computer interface based on Riemannian geometry
- [2] Emmanuel Kalunga, Sylvain Chevallier, Quentin Barthelemy, Karim Djouani, Eric Monacelli, Yskandar Hamam- Online SSVEP-based BCI using Riemannian geometry
- [3] Francois Benoıt Vialatte, Monique Maurice, Justin Dauwels, Andrzej Cichocki- Steady-state visually evoked potentials: Focus on essential paradigms and future perspectives

Thank You