



Department of Computer Science & Engineering  
Tezpur University

## Bioinformatics and Network Security Laboratory

The laboratory is equipped with several workstations, cluster computing facilities, and servers to carry out high computational tasks in network security and bioinformatics. A well-designed test bed is also available with several routers and switches to generate network traffic data which are used for network attack detection.

This project is assisted by DIT.

### a. Equipment(s)

Sl. No.	Equipment (with specification) and Year of Purchase	Quantity
1	PCs	9
2	Workstations	10
3	Server	1
4	Cluster Computing	1
5	Switches Rack	1
6	40 inch wall mount LCD display	1
7	UPS : 10 KVA	2
8	Scanner	1

### b. Types of Practical(s) Conducted

Sl. No.	Experiments Conducted/Performed
1	Developing test-beds to carry out experimental analysis and visualization of malware, and malware-based attacks. Also, aim is to generate benchmark malware datasets for both Android and Windows platform using static and dynamic behaviour modelling.
2	Development of clustering techniques for analysis of scRNA-seq data (without user input)
3	Analysis of gene expression data to identify significant disease biomarkers
4	Development of a victim end defence mechanism for known malware using supervised learning approaches (in traditional, incremental and distributed mode) for both (a) Android and (b) Windows malware with minimum false alarm



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**c. Open-source tools/software used:**

Sl. No.	Name of tool/ software	Utility
1	Anaconda	Scientific computing, data science, and machine learning
2	R	Statistical and data analysis for various bioinformatic tasks
3	Matlab	For various bioinformatic tasks
4	Tensorflow	For machine learning tasks
5	Pytorch	For deep learning tasks
6	Wireshark	For network packet analysis
7	Process monitor	To monitor file system activity in windows platform
8	PE studio	Analysis of portable executable files

**d. People working in the Laboratory:**

Research scholars and project students are working in the lab.