Tezpur University

Certificate

This is to certify that the thesis entitled *Development of effective algorithms for analyzing Protein Protein Interaction and Gene Expression data to support disease biomarker identification* submitted to Tezpur University in the Department of Computer Science and Engineering under the School of Engineering in partial fulfillment of the requirements for the award of the degree of Doctor of Philosophy in Computer Science is a record of research work carried out by Miss Pooja Sharma under my personal supervision and guidance.

All helps received by her from various sources have been duly acknowledged. No part of this thesis has been reproduced elsewhere for award of any other degree.

Signature of Research Supervisor

(Dhruba Kumar Bhattacharyya)
Designation: Professor
School: Engineering
Department: Computer Science and Engineering

University of Colorado

Certificate

This is to certify that the thesis entitled *Development of effective algorithms for analyzing Protein Protein Interaction and Gene Expression data to support disease biomarker identification* submitted to the Tezpur University in the Department of Computer Science and Engineering under the School of Engineering in partial fulfillment of the requirements for the award of the degree of Doctor of Philosophy in Computer Science is a record of research work carried out by Miss Pooja Sharma under my co-supervision and guidance.

All helps received by her from various sources have been duly acknowledged.

No part of this thesis has been reproduced elsewhere for award of any other degree.

Signature of Research Co-Supervisor

(Jugal K Kalita)
Designation: Professor
College of Engineering and Applied Science
Department of Computer Science

Tezpur University

Certificate

This is to certify that the thesis entitled *Development of effective algorithms for analyzing Protein Protein Interaction and Gene Expression data to support disease biomarker identification* submitted by Miss Pooja Sharma to Tezpur University in the Department of Computer Science and Engineering under the School of Engineering in partial fulfillment of the requirements for the award of the degree of Doctor of Philosophy in Computer Science has been examined by us on _____ and found to be satisfactory.

The Committee recommends for award of the degree of Doctor of Philosophy.

Signature of
Principal Supervisor

Signature of
External Examiner

Date:

Date: