

(A Central University Established By an Act of Parliament)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NAPAAM. TEZPUR – 784028

## Certificate

This is to certify that Mr. Sanjib Kumar Nayak bearing Roll No. CSI-08-001 has prepared the report on the dissertation entitled "A HMM based Method to Find Altered GC Regions in Bacterial DNA" in partial fulfillment for the award of degree M.Tech in Information Technology at Tezpur University. The work was done under my supervision and guidance at Department of Computer science and Engineering, Tezpur University, Tezpur, Assam during the period August 2009 to June 2010. The dissertation is the result of his efforts and endeavors. The dissertation is of desired quality and found worthy of acceptance for the award of Master of Technology in Information Technology.

Place: (Siddhartha Sankar Satapathy)

I wish him all the best in his future endeavours.

Tezpur Universitysor

Assistant Professor

Assistant Professor

Science & Engg.

Department of Computer Science & Engg.

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Napaam, Tezpur – 784028

Prof. D. K Bhattacharyya Head of the Department

Ref: Dated: 7<sup>th</sup> JUNE 2010

# Certificate

This is to certify that the dissertation entitled "A HMM based Method to Find Altered GC Regions in Bacterial DNA", is being submitted by SANJIB KUMAR NAYAK, in partial fulfillment for the award of degree M.Tech in Information Technology, Tezpur University, Tezpur, Assam, embodies the work carried out by him under the supervision of Assistant Prof. Mr. S. S Satapathy, Department of Computer Science and Engineering, Tezpur University, Tezpur, Assam, India during the period August 2009 to May 2010.

During the period of study at the university, he was found to be a sincere hardworking and well-behaved person.

(Head of the Department)

Department of Computer Scherce & English



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## Certificate

This dissertation entitled "A HMM based Method to Find Altered GC Regions in Bacterial DNA", submitted by SANJIB KUMAR NAYAK in partial fulfillment of the requirements for the degree of Master of Technology in Information Technology at Tezpur University has been examined and there by accord our approval as study and project work, carried out and presented in a manner required for its acceptance in the partial fulfillment of the requirement for the M.Tech degree. This approval does not necessarily endorse or accept every statement made, opinion expressed or conclusion drawn as recorded in the thesis. It only signifies the acceptance of this thesis for the purpose for which it is submitted.

Internal Examiner
Date: 7<sup>th</sup> June, 2010

Place: Tezpur

Professor

Department of Computer Science & Engg.

Tezpur University

External Examiner Date: 7<sup>th</sup> June, 2010

Place: Tezpur

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## Declaration

I hereby declare that the dissertation work entitled "A HMM based Method to Find Altered GC Regions in Bacterial DNA", submitted to the Department of Computer Science and Engineering, Tezpur University is prepared by me and was not submitted, to the best of my knowledge, elsewhere earlier, in part or in full, for the award of any other degree of this or any other institution or University.

(Sanjib kumar Nayak)
Roll No: CSI-08-001

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in the long way of my career.

Finally I dedicate this work to my parents and my loving ones.

Date:	
Place:	Saniib Kumar Navak