

DECLARATION BY THE CANDIDATE

I, VINAY KUMAR certify that the work embodied in this thesis is my own bonafide work and carried out by me under the joint supervision of Prof. Anil Kumar Tripathi and Dr. Lalit Kumar Singh from July-2013 to May-2017, at the Department of Computer Science and Engineering, Indian Institute of Technology (BHU) Varanasi. The matter embodied in this thesis has not been submitted for the award of any other degree/diploma. I declare that I have faithfully acknowledged and given credits to the research workers wherever their works have been cited in my work in this thesis. I further declare that I have not willfully lifted up any other's work, paragraphs, text, data, results, etc., reported in journals, books, magazines, reports dissertations, theses, etc., or available at websites and included them in this thesis and cited as my own work.

Date :

Signature of the Student

Place :

(VINAY KUMAR)

CERTIFICATE BY THE SUPERVISOR

It is certified that the above statement made by the student is correct to the best of my/our knowledge.

Signature of Supervisor

(Prof. Anil Kumar Tripathi)

Signature of External Supervisor

(Dr. Lalit Kumar Singh)

Signature of Head of Department