

DECLARATION BY THE CANDIDATE

I, **Vibhav Prakash Singh** certify that the work embodied in this thesis is my own bonafide work and carried out by me under the supervision of **Prof. Rajeev Srivastava** from **January-2014 to May-2018**, 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 wilfully 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: Varanasi

(Vibhav Prakash Singh)

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. Rajeev Srivastava)

Department of Computer Science and Engineering

Indian Institute of Technology (BHU), Varanasi

Signature of Head of Department

(Prof. Rajeev Srivastava)