

CANDIDATE'S DECLARATION

I, **Arvind Kumar Tiwari**, certify that the work embodied in this Ph.D. thesis is my own bonafide work carried out by me under the supervision of Dr. Rajeev Srivastava, Department of Computer Science and Engineering, from October 2012 to March 2015 at Indian Institute of Technology (Banaras Hindu University). The matter embodied in this Ph.D. thesis has not been submitted for the award of any other Degree/Diploma.

I declare that I have faithfully acknowledged, given credit to and referred to the research workers whenever their works have been cited in the text and the body of the thesis. I further certify that I have not willfully lifted up some other's work, para, texts, data, results, etc. reported in the journals, books, magazines, reports, dissertations, theses, etc., or available at websites and included them in this Ph.D. thesis and cited as my own work.

Date:

(Signature of the candidate)

Place: IIT(BHU), Varanasi

(Arvind Kumar Tiwari)

CERTIFICATE FROM THE SUPERVISOR

This is to certify that the above statement made by the candidate is correct to the best of my knowledge.

(Dr. Rajeev Srivastava)

Associate Professor

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(Supervisor)

(Prof. K. K. Shukla)

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