

CANDIDATE'S DECLARATION

I, *Shailendra Tiwari*, certify that the work embodied in this Ph.D. thesis is my own bonafide work carried out by me under the supervision of *Prof. Rajeev Srivastava*, for a period of 4 years 2 months from July, 2011 to September, 2015 at the *Department of Computer Science and Engineering, Indian Institute of Technology (Banaras Hindu University, Varanasi)*. 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 (Shailendra 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.

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