DESIGN AND DEVELOPMENT OF MACHINE LEARNING BASED APPROACHES FOR AUTOMATIC HUMAN ACTIVITY RECOGNITION IN VIDEO SURVEILLANCE SYSTEM



Thesis submitted in partial fulfillment

For the Award of Degree

DOCTOR OF PHILOSOPHY

in

COMPUTER SCIENCE AND ENGINEERING

by

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September 2020

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Signature of Supervisor Prof. Rajeev Srivastava Department of Computer Science and Engineering Indian Institute of Technology (BHU), Varanasi

DECLARATION BY THE CANDIDATE

I, **Roshan 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 **December -2016 to September-2020**, 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.

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

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