Dedicated to my beloved parents.

CERTIFICATE

It is certified that the work contained in the thesis titled **Models to Find Influential Users for Viral Marketing in Multilayer Networks** by **Katakamsetty Venkatakrishna Rao** has been carried out under my supervision and that this work has not been submitted elsewhere for a degree. It is further certified that the student has fulfilled all the requirements of Comprehensive Examination, Candidacy and SOTA for the award of Ph.D. Degree.

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DECLARATION

I, **Katakamsetty Venkatakrishna Rao**, certify that the work embodied in this thesis is my own bona fide work and carried out by me under the supervision of **Dr Ravindranath Chowdary C.** from July-2018 to December-2022, at the Department of Computer Science 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 copied any other's work, paragraphs, text, data, results, etc., reported in journals, books, magazines, reports dissertations, theses, etc., or available at websites and have not included them in this thesis and have not cited as my own work.

Date: 25-05-2023

Place: Varanasi

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CERTIFICATE BY THE SUPERVISOR

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

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K. Venkata Krishna Rao

Date: 18-05-2023

Katakamsetty Venkatakrishna Rao

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List of Abbreviations

IM	Influence Maximization
IC	Independent Cascade
LT	Linear Threshold
NOMC	Number of Maximal Cliques
SOC	Size of Clique
CIM	Clique based Influence Maximization
EWS	Edge Weight Sum
FIC	Finding Initial Communities
FC	Final Communities
DSC	Dice Similarity Coefficient
SN	Seed node
DIC	Detecting initial communities
MSC	Merging small communities
SIM	Similarity based Influence Maximization
CSC	cut similarity community
PCI	Power community Index