

A  
Major Project Report  
On  
**DYNAMIC CONTROL OF FRAUD INFORMATION  
SPREADING IN MOBILE SOCIAL NETWORKS**

*Submitted to*  
**Jawaharlal Nehru Technological University, Hyderabad**  
*in partial fulfillment of the requirements for the award of Degree of*  
**Bachelor of Technology**

*in*  
**Computer Science & Engineering**  
*by*

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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING



### CERTIFICATE

This is to certify that the project entitled "**DYNAMIC CONTROL OF FRAUD INFORMATION SPREADING IN MOBILE SOCIAL NETWORKS**" is submitted by **Chidirala Supraja (196Y1A0524)**, **Malladi Prasanna (196Y1A0559)**, **Bikkineni Ashwitha (196Y1A0509)** and **Kukal Sanjana (196Y1A0556)** in the partial fulfillment of requirement for the award of degree of Bachelor of Technology in Computer Science and Engineering during academic year 2022-23.

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## ABSTRACT

Mobile social networks (MSNs) provide real-time information services to individuals in social communities through mobile devices. However, due to their high openness and autonomy, MSNs have been suffering from rampant rumors, fraudulent activities, and other types of misuses. To mitigate such threats, it is urgent to control the spread of fraud information. The research challenge is: how to design control strategies to efficiently utilize limited resources and meanwhile minimize individuals' losses caused by fraud information? To this end, we model the fraud information control issue as an optimal control problem, in which the control resources consumption for implementing control strategies and the losses of individuals are jointly taken as a constraint called total cost, and the minimum total cost becomes the objective function. Based on the optimal control theory, we devise the optimal dynamic allocation of control strategies. Besides, a dynamics model for fraud information diffusion is established by considering the uncertain mental state of individuals, we investigate the trend of fraud information diffusion and the stability of the dynamics model. Our simulation study shows that the proposed optimal control strategies can effectively inhibit the diffusion of fraud information while incurring the smallest total cost. Compared with other control strategies, the control effect of the proposed optimal control strategies is about 10% higher.



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