

A new autonomous data
transmission reduction
method for wireless sensors
networks

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ABSTRACT

- ▶ The inherent limitation in energy resources and computational power for sensor nodes in a Wireless Sensor Network, poses the challenge of extending the lifetime of these networks.
- ▶ Since radio communication is the dominant energy consuming activity, most presented approaches focused on reducing the number of data transmitted to the central workstation.
- ▶ This can be achieved by deploying both on the workstation and the sensor node a synchronized prediction model capable of forecasting future values.
- ▶ Thus, enabling the sensor node to transmit only the values that surpasses a predefined error threshold. This mechanism offers a decrease in the cost of transmission energy for a price of an increase in the cost of computational energy.

EXISTING SYSTEM

- ▶ RECENT research reveals the existence of interesting communication patterns [1] among different participants of different social network platforms.
- ▶ These patterns have been shown to be useful in predicting product sales [2] and stock prices [3]. Compared to a social network, which can be considered as representing connections among people in the public, a corporate network connects only employees in a big corporation.
- ▶ While participants of a social network can express opinions on any issues of interest, members of a corporate communication network are expected to mainly talk about company-specific business. If human communication patterns can be discovered in the social networks to predict product sales or stock performance,
- ▶ one may wonder if such patterns also exist among members in corporate communication network to allow the same to be done. Unlike social networks, in a corporate communication network, e-mails have long been used as a tool for interorganizational and intraorganizational information exchange.

CONTD

- ▶ Based on these broad corporate communication theories, we hypothesize that every company has its own communication approach with identifiable patterns.
- ▶ In the same way, a social network platform is able to capture participants' behavior and their opinions about various issues and events.
- ▶ Thus, we argue that a corporate communication network in the form of an e-mail ecosystem also contains insightful information, such as organizational stability and robustness [4], about a company's development.
- ▶ We believe that these communication patterns can reflect how a company manages major corporate activities (such as mergers, acquisitions, new ventures, new process improvement approaches, going concerns, or bankruptcy) that may subsequently affect the company's performance in the stock market.

DISADVANTAGE

- ▶ we would like to find out whether or not there exist any association relationships between the frequency of e-mail exchange of the key employees in a company and the performance of the company as reflected in its stock prices.
- ▶ If such relationships do exist, we would also like to know whether or not the company's stock price could be accurately predicted based on the detected relationships

PROPOSED SYSTEM

- ▶ we propose that a company's performance, in terms of its stock price movement, can be predicted by internal communication patterns.
- ▶ To obtain early warning signals, we believe that it is important for patterns in corporate communication networks to be detected earlier for the prediction of significant stock price movement to avoid possible adversities that a company may face in the stock market so that stakeholders' interests can be protected as much as possible.
- ▶ Despite the potential importance of such knowledge about corporate communication, little work has been done in this important direction.

ADVANTAGE

- ▶ we also discovered that these relationships can predict stock price movements with an average accuracy of around 80%.
- ▶ The results confirm the belief that corporate communication has identifiable patterns and such patterns can reveal meaningful information of corporate performance as reflected by such indicators as stock market performance.
- ▶ Given the increasing popularity of social networks, the mining of interesting communication patterns could provide insights into the development of many useful applications in many areas

HARDWARE REQUIREMENTS

- ▶ Processor – Pentium -III
- ▶ Speed – 1.1 Ghz
- ▶ RAM – 256 MB(min)
- ▶ Hard Disk – 20 GB
- ▶ Floppy Drive – 1.44 MB
- ▶ Key Board – Standard Windows Keyboard
- ▶ Mouse – Two or Three Button Mouse
- ▶ Monitor – SVGA

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SOFTWARE REQUIREMENTS

- ▶ Operating System : Windows 8
- ▶ Front End : Java /DOTNET
- ▶ Database : Mysql/HEIDISQL

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CONCLUSION

- ▶ In this paper, we have proposed a new data reduction method that is fully autonomous and requires no calibration or intervention from the user, only the tolerated error threshold is specified and the rest is automatically adapted according to the collected data.
- ▶ Moreover, despite being very light in term of complexity and memory space, it is proven to be robust and extremely efficient in term of transmission reduction. Further-more,
- ▶ it has been demonstrated that our method outperforms other state of the art data reduction approaches.
- ▶ This has been proven through an appropriate simulation on real collected measurements of different environmental features.

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