

**A SCALABLE FRAMEWORK FOR  
WIRELESS DISTRIBUTED  
COMPUTING**

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# ABSTRACT

- A wireless distributed computing system, in which multiple mobile users, connected wirelessly
- through an access point, collaborate to perform a computation task
- When users communicate with each other via the access point to exchange their locally computed intermediate computation results, which is known as *data shuffling*
- We propose a scalable framework for this system, in which the required communication bandwidth for data shuffling does not increase with the number of users in the network
- idea is to utilize a particular repetitive pattern of placing the data set (thus a particular repetitive pattern of intermediate computations)
- In order to provide the coding opportunities at both the users and the access point



# CONTINUE

- We also demonstrate that the proposed data set placement and coded shuffling schemes are optimal (i.e., achieve the minimum required shuffling load) for both a centralized setting and a decentralized setting, by developing tight information-theoretic lower bounds.

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# EXISTING SYSTEM

- A wireless distributed computing system, in which multiple mobile users, connected wirelessly through an access point, collaborate to perform a computation task

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# DISADVANTAGES

- Multiple users takes place
- Data shuffling is done

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# PROPOSED SYSTEM

- scalable wireless distributed computing framework, for both the centralized and the decentralized settings, such that the shuffling load does not increase with the number of participating users.
- In particular, we use are repetitive placement of the dataset across the users to enable coding, reducing the shuffling load by a factor that scales linearly with the network size.



# ADVANTAGES

- Shuffling does not increase the number of participating users
- repetitive placement of the dataset across the users to enable coding reducing the shuffling
- achieve the minimum required shuffling load
- improving the response
- latency, increasing their computing capabilities, and enabling
- complex applications in machine learning, data analytics, and autonomous operation

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# SYSTEM REQUIREMENTS

## HARDWARE REQUIREMENTS

- System : Pentium IV 2.4 GHz.
- Hard Disk : 40 GB.
- Floppy Drive : 1.44 Mb.
- Monitor : 15 VGA Colour.
- Mouse : Logitech.
- Ram : 512 Mb.

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## ○ SOFTWARE REQUIREMENTS

- Operating system : Windows XP/7.
- Coding Language : ASP.net, C#.net
- Tool : Visual Studio 2010
- Database : SQL SERVER 2008



# CONCLUSION

- In this paper, we proposed a scalable wireless distributed computing framework, for both the centralized and the decentralized settings, such that the shuffling load does not increase with the number of participating users. In particular, we use a repetitive placement of the dataset across the users to enable coding, reducing the shuffling load by a factor that scales linearly with the network size.

