หัวข้อวิทยานิพนธ์ (วศ.ม.)

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M.Eng.

Grid computing is distributed computing infrastructure over the Internet. It is focused on large-scale resource sharing, innovative applications, and high-performance orientation over multiple organizations becoming "virtual organization". Grid computing has been considered to be one of the most important fields of distributed/parallel computing in the future.

Topic: Security Management Framework for GRID Virtual Organization

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One of the most important areas that must be addressed is how to manage global security across several organizations. However, the framework for security management for virtual organization is still lacking. This topic will ask the student to study, design, and create framework for security management, preferably using RBAC.

Topic: Grid Accounting Service

As Grid computing has been positioned for scientific research, accounting has been neglected at the beginning. With number of Grid users increase, first-come-first-serve style is no longer sufficient to provide good services for all users. The nature of resource sharing in Grid requires the ability to fairly provide resources among users. Thus, accounting service for Grid computing is needed in order to keep tracks the resource consumptions of users in the virtual organization. Although there are some researches in this area, there are still many open issues. This topic will ask student to focus on the design and implementation of accounting service for Globus system, a de-facto standard Grid implementation.

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Topic: Grid Collective Communication Service

Collective communication is a group communication in distributed/parallel computing. This type of communication is always a vital part for a parallel system as it enables a group of processes to communicate and coordinate during their execution to achieve the common goals. Although collective communication has been addressed extensively in typical tightly-coupled parallel computing, it has not been fully addressed in Grid computing research. The loosely-coupled natures of Grid system leads to new problems for collective communication services as new algorithms and benchmarks are needed. In this topic, the student will study, design, and evaluate various collective communication algorithms in order to create efficient collective communication services for Grid computing.

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