



Universität Regensburg

Universität Regensburg · D-93040 Regensburg

FAKULTÄT  
WIRTSCHAFTSWISSENSCHAFTEN

Lehrstuhl für Wirtschaftsinformatik I -  
Informationssysteme

**Prof. Dr. Günther Pernul**  
Telefon +49 941 943-2742  
Telefax +49 941 943-2744  
Sekretariat:  
Telefon +49 941 943-2743  
Telefax +49 941 943-2744  
Universitätsstraße 31  
D-93053 Regensburg

guenther.pernul@wiwi.uni-regensburg.de  
www-ifs.uni-regensburg.de

Regensburg, 02.02.2010

### Einladung zum Gastvortrag

Der Lehrstuhl für Wirtschaftsinformatik I – Informationssysteme freut sich, einen Vortrag zum Thema:

#### „ Detection of Credit Card Fraud and Database Intrusion using Sequence Alignment “

ankündigen zu dürfen.

Es spricht: **Associate Professor Dr. Shamik Sural, Indian Institute of Technology, Kharagpur**

#### Abstract:

Our society increasingly relies on systems in which information is stored digitally and accessed from anywhere. Despite the use of prevention based security measures like authentication and access control, intruders often penetrate the system, resulting in disastrous consequences. Therefore, only prevention based security measures are often not sufficient to protect sensitive information against novel attacks. An intrusion detection system (IDS) can be included as a second layer of defence to establish and assure a certain degree of security once the preventive layer is penetrated. As application level attacks are far more business impacting, intrusion detection is required at the level of application to offer accurate detection for specific domains like credit card payment and other information systems.

In this talk, we initially present a credit card fraud detection system and then enhance the model for detecting intrusions in general purpose database systems. In real life, fraudulent credit card transactions could be interspersed with genuine transactions and simple pattern matching techniques are not often sufficient to detect the fraudulent transactions efficiently. We use sequence alignment to determine possible cases of fraudulent transactions. Our fraud detection model is based on the strengths of both anomaly and misuse based detection techniques. As there are millions of card holders under a particular bank, the fraud detection process should be fast enough to achieve a reasonable level of customer satisfaction. We propose a hybrid algorithm named BLAH which combines the advantages of BLAST and SSAHA algorithms for fast response time.

A database IDS needs to be flexible enough to choose a profile granularity according to the type of the organization. Further, only intra-transactional pattern matching for intrusion detection is not quite effective in detecting intrusion in a database. Our proposed model uses inter-transactional as well as intra-transactional features for intrusion detection. It supports selection of profile and transactional feature granularity as well.

Termin: **Donnerstag, 11. Februar 2010, 11:30 Uhr, RW(S) 111**