Final Program

8:30 – 9:00 Registration (Building 4, 3rd Floor, Room 311)

9:00 – 9:05 Welcome Address: Prof. Dr. Tibor Vajnai / Dr. Lóránt Kovács

Session Chair: Tamás Kovács

9:05 – 9:35 Pál Varga: Distributed Denial of Service (DDoS) attacks - and mitigation methods

Abstract:

DDoS attacks are the leading among cyberattacks, in terms on the network data volume they generate. Their aim is to prevent the otherwise valid access to certain services, corrupting a principal element of information security: Availability. (The other are Confidentiality and Integrity.)

The lecture provides an overview of the typical DDoS attack-types (i.e., direct vulnerability-based, flood, reflection+amplification), their operation, and the mitigation possibilities. Furthermore, we reveal the internals of the newest, microburst-type DDoS attacks, as well as their detection and prevention possibilities.

9:35 - 10:05 Szilveszter Kovács: Fuzzy Rule Interpolation based Behavior Modeling for Ethorobotics

Abstract:

Fuzzy Rule Interpolation (FRI) methods are efficient structures for knowledge representation with relatively few rules. The goal of this presentation is to give a short introduction to the concept of FRI and to the way as an FRI based state machine can be constructed from the guide-lines of an Ethologically inspired model for acting as an embedded behavior model in Human-Robot Interaction. Fuzzy Rule Interpolation (FRI) methods are efficient structures for knowledge representation with relatively few rules. The goal of this presentation is to give a short introduction to the concept of FRI and to the way as an FRI based state machine can be constructed from the guide-lines of an Ethologically inspired model for acting as an embedded behavior model in Human-Robot Interaction.

10:05 – 10:20 Sara Imene Boucetta: Vehicular Ad-hoc Networks (VANETs): Characteristics, challenges and Perspective

Abstract:

Nowadays, the need for an Intelligent Transport System (ITS) became a priority, considering the growing need of security and infotainment applications on the road, Vehicular Ad-hoc Network (VANET) emerged as a support technology for ITS. Thanks to radio communication equipment: radio interface, access points, spectrum, and standards enabling communication between vehicles (V2V), vehicular ad-hoc networks or VANETs set the stage for unlimited opportunities for Inter-vehicular communication (IVC).

Achieving on-board applications requires techniques and protocols that take into account the uncertainties and requirements of these networks especially due to their high mobility and speed. Indeed, consortia of researchers, car manufacturers and standards organizations are currently carrying out substantial research to take up the challenge over security,
localization, packet dissemination and routing, in order to propose standards for rapid deployment of the technology.

10:20 – 10:30 Konrád Kávai: Eddie - Small step for the students, big step for the education!

Abstract:
Are you interested in virtual reality? How about it’s big brother, the augmented? What would you think, if we would say, that the primary school’s education could be as interesting as a computer game? Eddie’s goal is exactly this: make the education exciting, interactive, and experience based!

10:30 – 10:45 Coffee break

Session Chair: Csaba Fábián

10:45 - 11:00 Mohammad Almseidin: Intrusion Detection System based on Fuzzy Rule Interpolation

Abstract:
Fuzzy Rule Interpolation (FRI) methods offer the interpolated conclusions even in case if some situations are not explicitly defined in a fuzzy rule based knowledge representation. The aim of this presentation is to introduce the benefits of FRI methods in the Intrusion Detection Systems (IDS) application area. In the design and implementation of the detection mechanism for Distributed Denial of Service (DDOS) attacks. The FRI methods offer extension of the binary decision problem to the continuous truth value, in which the inferred consequence like “the level of intrusion”, which makes the response result more readable and clearly analyzed rather than binary decision.

11:00-11:15 Imre Piller: RDF Graph Representation of Logical Formulas

Abstract:
The RDF graph is a general purpose model for describing semantical data. As a special case, we can represent expert knowledge in the form of logical formulas directly in the RDF graph. It makes possible to manage wider range of metadata in a unified manner. This work shows the representation method, and its advantages and drawbacks.

11:15 – 11:30 László Göcs: Importance of Passwords in IT Security

Abstract:
Passwords are one of the most important tools of data protection. Although they offer the simplest and cheapest opportunity for knowledge-based authentication often they are not applied properly, or they are not used at all. The presentation shows the possibilities and criteria of password-based authentication as well as the typical attack types that threaten it. The recommended defense approaches are also discussed.

11:30-11:45 Péter Agg, Zsolt Csaba Johanyák: Kandoo - An opportunity for scalable SDN

Abstract:
In Software Defined Networks (SDN), similar to the conventional networks, the requirement for scalability is indispensable. Frequent problems may be caused by the finite capacity of the SDN controllers. The Kandoo technique discussed in our article offers a well-useable, highly controllable scalable control option. Typically, using local applications resolves frequent data process control, while performing unmanaged tasks with the central controller. This solution helps to significantly reduce the bandwidth required for flat communication, so the speed will be significantly faster compared to the conventional OpenFlow protocol. Of course, this method includes the disadvantages that hopefully technological developments will be able to remedy.

11:45 – 12:00 Zsolt Csaba Johanyák: Fuzzy Model Generation from Sample Data

Abstract:

Fuzzy logic based solutions have been applied successfully in a wide range of fields owing to their well readable and interpretable rule based knowledge description. There are three key factors determining the success of a fuzzy application: rules, fuzzy membership function types, and applied inference technique. The presentation gives an introduction to the main ideas of defining these factors in case of some practical applications.

12:10 – 13:15 Lunch, Coffee, Networking