

## Europass Curriculum Vitae



### Personal information

First name(s) / Surname(s)	<b>Béla Genge</b>
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E-mail	bgenge@engineering.upm.ro
Nationality	Romanian
Home Page	<a href="http://www.ibs.ro/~bela/">http://www.ibs.ro/~bela/</a>
Date of birth	13.01.1982
Gender	Male

### Work experience

Dates	<b>2005-present</b>
Occupation or position held	Assistant professor
Main activities and responsibilities	<p>During this period I have been engaged in two activity types:</p> <p>1. Teaching activities, some of the courses and labs I have been teaching:</p> <ul style="list-style-type: none"> <li>- Information Security Course</li> <li>- Information Security Lab</li> <li>- Computer Networks Lab</li> <li>- Microprocessor-based Systems Lab</li> <li>- Data Structures Lab</li> <li>- Object Oriented Programming Lab</li> </ul> <p>2. Research activities:</p> <ul style="list-style-type: none"> <li>- Design and implementation of security protocols</li> <li>- Security specifications for automated secure service execution</li> <li>- Cryptographic primitives for MANET and sensor networks</li> </ul>
Name and address of employer	"Petru Maior" University of Târgu Mureş, Romania
Dates	<b>2006-present</b>
Occupation or position held	Consultant
Main activities and responsibilities	<p>During this period I have been involved in three major projects:</p> <p>1. Design and implementation of intelligent systems for distribution networks. Main responsibilities involved designing and implementing the necessary Linux drivers for communicating with the Ripple Control hardware. The developed drivers were used to control and monitor devices connected to a power line. The goal of the final product was to ensure an optimal energy consumption/cost by turning ON/OFF heating devices.</p> <p>2. Design and implementation of a new middleware for implementing secure video surveillance systems. Main responsibilities involved designing and implementing the video surveillance component of the ESS (<a href="http://www.ibs-smarthouse.com/en/">http://www.ibs-smarthouse.com/en/</a>) project. I have designed a new security protocol specification based on WSDL-S and OWL and a new middleware for automatically executing security protocol specifications. One of the main advantages of this middleware was that security protocols could automatically be added/removed/updated without stopping the video surveillance components.</p>

3. Implementation of a security mechanism for authentication and Single Sign On at multiple Web resources running in the Microsoft Azure Cloud. For this purpose I have evaluated existing SSO mechanisms and I have chosen Shibboleth, an open-source solution that can also be used outside the cloud. I have also developed several applications for automatically deploying Shibboleth in the Cloud.

Name and address of employer Intelligent Building Solutions, Târgu Mureş, Romania

Dates **2004-2005**

Occupation or position held Software developer

Main activities and responsibilities Design and implementation of distributed multimedia systems. Main responsibilities involved implementing new authentication mechanisms, maintaining and implementing new requirements for the Hermix (<http://www.hermix.com/index.html>) video conferencing main server. I have integrated into the Hermix server the authentication of users via Hyperwave's IIS server, via LDAP servers and via Microsoft NTLM.

Name and address of employer Integrasoft, Târgu Mureş, Romania

## Education and training

Dates **2005-2009**

Title of qualification awarded **PhD** in Computer Science, thesis title "Contributions to the composition and implementation of security protocols", Advisor Prof. Dr. Eng. Iosif Ignat

Principal subjects/occupational skills covered Modelling security protocols, identifying multi-protocol attacks, designing new security protocols by composition, implementing security protocols

Name and type of organisation providing education Technical University of Cluj-Napoca, Romania

Level in national or international classification PhD

Dates **2000-2005**

Title of qualification awarded **Diplomat Engineer** in Computer Science

Name and type of organisation providing education "Petru Maior" University of Târgu Mureş, Romania

Level in national or international classification Diplomat Engineer – 5 years

Dates **1996-2000**

Title of qualification awarded **High school diploma**

Name and type of organisation providing education Informatics High school, Bistriţa, Romania

Level in national or international classification High school diploma

## Personal skills and competences

Mother tongue(s) **Hungarian**

Other language(s) **Romanian, English**

Self-assessment

*European level (\*)*

**Language**

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
<b>HU</b>	C2 (Proficient User)	<b>HU</b>	C2 (Proficient User)	<b>HU</b>	C1 (Proficient User)	<b>HU</b>	C1 (Proficient User)	<b>HU</b>	C1 (Proficient User)
<b>RO</b>	C2 (Proficient User)	<b>RO</b>	C2 (Proficient User)	<b>RO</b>	C1 (Proficient User)	<b>RO</b>	C1 (Proficient User)	<b>RO</b>	C1 (Proficient User)
<b>EN</b>	C1 (Proficient User)	<b>EN</b>	C1 (Proficient User)	<b>EN</b>	B2 (Independent User)	<b>EN</b>	B2 (Independent User)	<b>EN</b>	B2 (Independent User)

(\*) *Common European Framework of Reference for Languages*

Social skills and competences Ability to establish good working relationships with people of different national and cultural backgrounds, good communicational skills

Organisational skills and competences	Excellent organizational and leadership skills, I am the advisor of several students diploma thesis, many of them have won awards on national and international competitions
Technical skills and competences	C/C++/Java/Qt/MFC/QuickTime and OpenSSL/Crypto++/Cryptlib/NSS programming skills Multi-platform (Linux, Mac OS, Windows) programming skills Embedded programming skills: C programming for Microchip PIC microcontrollers, ELinOS driver development Parallel GPU computing skills
Computer skills and competences	LaTeX, MS Word, Excel, Power Point
Artistic skills and competences	Playing the violin, playing the piano
Driving licence	B category driving license since 2001

## Research projects

1. "Vulnerability analysis of electric distribution and transmission networks", research contract 4335/29.12.2009, joint research between "Petru Maior" University of Târgu Mureş and S.C. Electrica S.A., Romania, 2010, **collaborator**.
2. "Innovative Tools and Models for Vocational Education and Training in Central and Western Romania – MOVE-IT", research contract RO 0038, joint research between "Petru Maior" University of Târgu Mureş and the Norwegian Government, 2009-2011, **collaborator**.
3. "Mobile Knowledge Workplace supporting Service Workers", research project for "Kompetenzzentrum für wissensbasierte Anwendungen und Systeme Forschungs- und Entwicklungsgesellschaft", Austria, Nr. WV-2008-06, as a **collaborator** with IBS (Intelligent Building Solutions, Târgu Mureş).
4. "Contributions to the composition of security protocols", research project Nr. 2445/2007, "Petru Maior" University of Târgu Mureş, **coordinator**.
5. "Monocular Head Mounted net-Conferencing for Service Workers", research project for "Kompetenzzentrum für wissensbasierte Anwendungen und Systeme Forschungs- und Entwicklungsgesellschaft", Austria, Nr. WV-2007-09, as a **collaborator** with IBS (Intelligent Building Solutions, Târgu Mureş).
6. "Adaptation of net-Conferencing for Mobile Devices", research project for "Kompetenzzentrum für wissensbasierte Anwendungen und Systeme Forschungs- und Entwicklungsgesellschaft", Austria, Nr. WV-2006-14, as a **collaborator** with IBS (Intelligent Building Solutions, Târgu Mureş).

## Development-research projects for companies in collaboration with IBS

1. Enermet, Switzerland, "Software for distribution networks based on Ripple Control technology and remote meter reading", 2007-2009.
2. Hyperwave, Germany, "Integration between Hyperwave Document Management System and Hermix conferencing", 2004-2008.
3. Utomi GMBH ,Germany, "Net-conference Applications", 2007.
4. Intelli AS, Norway, "Software to control smart houses", 2005.
5. Siveco, Romania, "Integrating the Hermix video conferencing system with the AEL e-Learning Platform", 2005.

## Journal papers

1. **Genge Bela**, Haller Piroska, A New Video Surveillance System Using Automated Secure Service Composition, Studia Universitatis Babes-Bolyai Series Informatica, Volume LV, Number 2, pages 35-46, 2010.
2. Ovidiu Ratoi, Haller Piroska, **Genge Bela**, A New Multimedia Streaming Platform Based on XPCOM Components, Studia Universitatis Babes-Bolyai Series Informatica, Volume LV, Number 2, pages 47-56, 2010.
3. **Genge Bela**, Haller Piroska, Middleware for Automated Implementation of Security Protocols, 6<sup>th</sup> European Semantic Web Conference, Heraklion, Greece, Lecture Notes in Computer Science (LNCS 5554), Springer-Verlag, pages 476-490, 2009.
4. **Genge Bela**, Haller Piroska, Towards Automated Secure Web Service Execution, Networking 2009, Aachen, Germany, Lecture Notes in Computer Science (LNCS 5550), Springer-Verlag, pages 943-954, 2009.
5. **Genge Bela**, Towards Automated Execution of Security Protocols for Web Services, Studia Universitatis Babes-Bolyai Series Informatica, Volume LIV, Number 2, pages 23-36, 2009.
6. Magyari Attila, **Genge Bela**, Haller Piroska, Certificate-based Single Sign-On Mechanism for Multi-Platform Distributed Systems, Acta Universitatis Sapientiae - Electrical and Mechanical Engineering, Volume 1, pages 113-123, 2009.
7. **Genge Bela**, Haller Piroska, Extending WS-Security to Implement Security Protocols for Web Services, Acta Universitatis Sapientiae - Electrical and Mechanical Engineering, Volume 1, pages 105-112, 2009.

8. **Genge Bela**, Haller Piroska, Ovidiu Ratoi, Constructing Security Protocol Specifications for Web Services, Intelligent Distributed Computing, Italy, Studies In Computational Intelligence, Springer-Verlag Berlin Heidelberg, Sept. 2008, Volume 162/2008, pages 245-250, 2008.
9. **Genge Bela**, Iosif Ignat, Syntactic Sequential Composition of Security Protocols, Journal of Automation Computers Applied Mathematics (ACAM), Volume 17, No. 2, pages 169-178, 2008.
10. **Genge Bela**, Iosif Ignat, An Abstract Model for Security Protocol Analysis, WSEAS Transactions on Computers, Issue 2, Volume 6, pages, 207-215, February 2007.
11. **Genge Bela**, Haller Piroska, A Chained Authentication Model for Virtual Organizations, Acta Universitatis Cibiniensis, VOL. LV, Technical Series, pages 60-68, 2007.

## Proceedings papers

1. **Genge Bela**, Haller Piroska, End-Host Distribution in Application-Layer Multicast: Main Issues and Solutions, 9th RoEduNet IEEE International Conference, Romania, pages 334-339, 2010.
2. Potop Radu, Iovanici Otto, **Genge Bela**, Haller Piroska, A Fault Tolerant Peer-to-Peer Replication Network, 9th RoEduNet IEEE International Conference, Romania, pages 196-201, 2010.
3. Farkas Gyula, **Genge Bela**, Haller Piroska, A Platform for Implementing Secure Wireless Ad Hoc Networks, MACRo2010, Proceedings of the 2nd conference on Recent Achievements in Mechatronics, Automation, Computer Science and Robotics, Scientia Publishing House, Romania, pages 29-32, 2010.
4. **Genge Bela**, Iosif Ignat, Haller Piroska, Automated Composition of Security Protocols, 2009 IEEE International Conference on Intelligent Communication and Processing (ICCP 2009), Cluj-Napoca, Romania, pages 251-258, 2009.
5. **Genge Bela**, Haller Piroska, A syntactic approach for identifying multi-protocol attacks, ICUMT '09 - International Conference on Ultra Modern Telecommunications, St. Petersburg, Russia, pages 1-5, 2009.
6. **Genge Bela**, Haller Piroska, A Modeling Framework for Generating Security Protocol Specifications, 10th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing (SYNASC'08), Workshop on Global Computing Models and Technologies, Timisoara, Romania, pages 362-365, 2008, IEEE Computer Society Press.
7. Ovidiu Ratoi, Haller Piroska, Ioan Salomie, **Genge Bela**, Component Based Platform for Multimedia Applications, 7th IEEE RoEduNet International Conference, Cluj-Napoca, Romania, pages 40-43, Aug. 2008.
8. **Genge Bela**, Haller Piroska, Ovidiu Ratoi, Iosif Ignat, Term-based composition of security protocols, 2008 IEEE International Conference on Automation, Quality and Testing, Robotics, Cluj-Napoca, Romania, pages 233-238, May 2008.
9. **Genge Bela**, Haller Piroska, Iosif Ignat, Ovidiu Ratoi, Informal specification-based performance evaluation of security protocols, 4th IEEE International Conference on Intelligent Computer Communication and Processing, Cluj-Napoca, Romania, pages 193-200, Aug. 2008.
10. **Genge Bela**, Haller Piroska, Middleware for Implementing Security Protocols, 8th International Conference on Computer Science and Energetics-Electrical Engineering, Sumuleu-Ciuc, Romania, pp. 139-144, October 2008.
11. **Genge Bela**, Iosif Ignat, Verifying the Independence of Security Protocols, 3rd IEEE International Conference on Intelligent Computer Communication and Processing, Cluj-Napoca, Romania, pages 155-163, September 2007.
12. **Genge Bela**, Haller Piroska, Bindings for Security Protocol Composition, In the Proceedings of the 6th IEEE RoEduNet International Conference, Craiova, Romania, pages 64-69, November 2007.
13. **Genge Bela**, Haller Piroska, Extending the Strand Space Model for Security Protocol Composition, International Scientific Conference "Interdisciplinarity in Engineering", Inter-Ing 2007, Târgu Mures, Romania, pages 1-7, November 2007.
14. **Genge Bela**, Haller Piroska, Attacks in single and multi-protocol environments, 7th International Conference on Computer Science and Energetics-Electrical Engineering, Oradea, Romania, pages 54-58, October 2007.
15. **Genge Bela**, Programming Manual for Smart Houses, Eliberatica – The benefits of Open and Free Technologies, Brasov, Romania, Locally edited booklet, June 2007.
16. **Genge Bela**, Iosif Ignat, A typed specification for security protocols, In the Proceedings of the 5th WSEAS Int. Conf. on Data Networks, Communications & Computers, Bucharest, Romania, pages 113-118, October 2006.
17. **Genge Bela**, Haller Piroska, Towards a distributed authentication system in Coordinated Mobile Virtual Organizations, In the Proceedings of the 5th RoEduNet IEEE International Conference, Sibiu, Romania, pages 119-123, July 2006.
18. Haller Piroska, **Genge Bela**, Security Issues in Wireless Distance Vector Routing Protocols, International Scientific Conference "Interdisciplinarity in Engineering", Inter-Ing 2005, Târgu Mures, Romania, pages 662-668, 2005.

## Book

**Genge Bela**, Haller Piroska – Designing dedicated and embedded systems using the PIC microcontroller, "Petru Maior" University Press, Târgu Mures, 2008 (In Romanian).

## **Awarded travel grants**

1. Travel grant to the "Networking 2009" conference held in Aachen, Germany, travel grant UTA-09/1-0021, awarded by the Communitas Foundation, Cluj-Napoca, Romania.
2. Travel grant to the "ESWC 2009" conference held in Heraklion, Greece, PhD student travel grant AQN70308/280709, awarded by the Semantic Technology Institute International.

## **Awards**

1. "XRIP (eXtended Routing Information Protocol), a new secure routing protocol", 1st prize, student scientific conference, University of Sapientia, Targu Mures, Romania, 2005.
2. "XROUTER, integrating XRIP with classic routers", 2nd prize, student scientific conference, "Petru Maior" University, Targu Mures, Romania, 2005.

## **Awards received by supervised student projects**

1. Student: Magyari Attila, "Authentication, Authorization and Access Control in Distributed Systems", 8th prize, Genius International Invention Fair, Budapest, Hungary, 2009.
2. Student: Albert Szabolcs, "Enhancing the performance of sorting algorithms using GPU computing", 2nd prize, scientific conference, "Petru Maior" University, Targu Mures, Romania, 2010.
3. Student: Radu Darlosan, "Remote and local command of CC motors", 4th prize, scientific conference, "Petru Maior" University, Targu Mures, Romania, 2010.

## **Committee member**

Advisory board "The Society of Digital Information and Wireless Communications – SDIWC"

Reviewer "ACM Transactions on Autonomous and Adaptive Systems – TAAS"

Reviewer "International Journal of Computer Science and Information Security – IJCSIS"

IPC Member "International Conference on Digital Information Processing and Communications", Ostrava, Czech Republic, 2011

Reviewer "Networked Digital Technologies", Prague, Czech Republic, 2010

Reviewer "International Multi-Conference on Complexity, Informatics and Cybernetics", Orlando, Florida, USA, 2010

Reviewer "Understanding Intelligent and Complex Systems", International Symposium, Targu Mures, Romania, 2009

Organizing Committee "Interdisciplinarity in Engineering", International Conference, Targu Mures, Romania, 2009

## **Currently teaching**

Computer Networks – Lab, Computer Science (BSc)

Information Security – Course + Lab, Computer Science (BSc)

Formal Languages and Automata – Lab, Computer Science (BSc)

Object Oriented Programming – Lab, Computer Science (BSc)

Data Structures and Algorithms – Lab, Computer Science (BSc)

Distributed Systems – Lab, Computer Science (MSc)