Dimiter Milushev, PhD, MBA   Curriculum vitæ   March 2016

Contact **Information**	Thomas Frissenlaan 2 1160 Oudergem, Brussels, Belgium	*Cell:* +32 487 364998 dimiter.milushev@gmail.com

Date of Birth   14 May 1981

Nationality   Bulgarian, Belgian

Key Strengths   PhD graduate in Computer Science, MBA graduate.

Profound knowledge of the state-of-the-art in IT security, including formal verification, model-checking, authentication (one, two and three-factor) and authorization mechanisms, wireless security and public key infrastructures, network security, security of cyber-physical systems.

Excellent Analytics and Data Mining skills – knowledge and experience with state of the art supervised and unsupervised learning algorithms. Special interest in deep learning, in particular in convolutional neural networks.

Bioinformatics experience – statistical and machine learning analysis of microarray data.

Analytical mind, dedicated and goal-oriented, fast-learner and "out-of-the-box thinker".

Strategy, management and soft skills expertise.

Communicative and easy going, ability to present and adapt technical and business data to different stakeholders and audiences.

Team player with high integrity, enjoying communication and cooperation that often bring synergies.

Demonstrated ability to work with people having different educational and cultural backgrounds and to adapt to dynamic environments.

Ability to convince others as well as good understanding of conflict management and negotiation.

Education   **KU Leuven**, Leuven, Belgium   **October 2008 – June 2013**

PhD in Computer Science
- Thesis title: *Reasoning about Hyperproperties*
- Advisor: prof. Dave Clarke
- Area of study: Formal verification of security-relevant policies

Hamburg University of Technology, Hamburg, Germany

October 2004 – September 2007

MS in Information and Media Technology, GPA 1.7, September 2007
- Thesis title: *Public Key Infrastructure for Wireless Systems*
- Advisor: prof. Dieter Gollmann

– Area of study: IT Security technology

Northern Institute of Technology Management, Hamburg, Germany
October 2004 – September 2007

MBA in Technology Management, GPA 1.9, September 2007

– Major subjects: Project Management, Innovations Management, Strategy, Finance, Marketing, International Law, Intellectual Property Rights Law.

Linfield College, Oregon, USA
August 2000 – May 2003

BS, Double Degree in Computer Science and Mathematics, GPA 3.91/4.0, May 2003

– Award: *Outstanding Graduating Senior in Computer Science Award (in association with the Software Association of Oregon)*

Professional Experience

Brussels, Belgium
June 2015 – current

Independent Researcher

– Quality control and visualization of biological data.
– Statistical and machine learning analysis of biological (transcriptomics) data to identify genotoxicant-specific gene sets (using R).
– Built classifiers based upon genotoxicant-specific gene sets (using R) .

KU Leuven, Leuven, Belgium
June 2013 – June 2015

Post Doctoral Researcher

– Proposed runtime enforcement techniques of security policies on blackbox reactive programs.
– Applied machine learning techniques for automating classification of websites.
– Surveyed access control models in Software as a Service (Cloud) applications.
– Participated in writing European and local research project applications.

KU Leuven, Leuven, Belgium
October 2008 – June 2013

Researcher

– Developed logical languages for specification of rich security policies.
– Proposed new techniques for specification and verification of security policies.
– Developed game-based techniques for verification of systems.
– Participated in teaching, preparing assignments and grading various courses.
– Proposed thesis topics, supervised and evaluated the final performance of master thesis students.

Sal. Oppenheim, Frankfurt, Germany

IT-Consultant/Developer
January 2008 – September 2008

– Integrated C++ libraries for the trading system Imagine.
– Performed development work on an existent cluster framework in the software system Symphony.
– Implemented pricing models for trading with exotic derivatives.
– Developed and executed technical test concepts for derivative trading.
– Performed technical benchmarks of financial instruments in the field of stock derivatives.

Airbus, Finkenwerder, Germany

Master Thesis Student   **February 2007 − August 2007**

- Analyzed the state of the art w.r.t. authentication and authorization in wireless networks by using a Public Key Infrastructure (PKI).
- Studied the 802.11i standard, a security framework for authentication, based on 802.1X and EAP-based methods.
- Proposed a new PKI exclusively for authentication and authorization of wireless devices, taking into account the Airbus-specific limitations.
- Main features of the proposal: automatic certificate enrollment and deployment, utilization of the directory as an RA, automatic certificate renewal and superseding.
- Thesis Title: "Public Key Infrastructure for Wireless Systems".

Siemens, CT, IC1, München, Germany

Intern   **August 2005 − November 2005**

- Utilized my Oracle DB expertise.
- Documented an existing tool for Data Warehousing.
- Performed various tasks in the field of Data Warehousing (ETL process) and Web-Mining.

Linfield College Campus Security Department, McMinnville, Oregon, USA

Intern   **September 2001 − March 2002**

- Performed planning, analysis, design, implementation, testing and maintenance of a relational database.
- Used Microsoft Access and Visual Basic6.

Technical Skills

Programming Languages: C++, Python, Java, Haskell, R, SQL, PL/SQL.

Security: Software security, AAA-infrastructure (RADIUS, Diameter), PKI, 802.11i, 802.1X, EAP-based methods, IPS/IDS, Network Security, Symmetric and Asymmetric Encryption.

Sec. Tools: Nessus, Nmap, tcpdump, Wireshark, Kismet, Metsploit, Aircrack-ng, Snort.

Network protocols: TCP/IP, UDP, SNMP, SMTP, DNS, HTTP(S)

Machine Learning: Linear regression, logistic regression, neural networks, convolutional and recurrent neural networks, SVM, decision trees.

Machine Learning Tools and Libraries: R-Studio, Weka, MATLAB (Octave), Spark MLlib, scikit-learn library, Theano, Lasagne, Nolearn.

Databases: Oracle Server, Microsoft SQL Server, MySQL

NoSQL storage systems: Hadoop, BigTable.

Operating Systems: MacOS, Linux, Kali Linux, Windows.

Certificates

- ITIL v3 Foundation Certificate in IT Service Management
- Mathfinance: Introduction to Monte Carlo methods and C++ in Financial Engineering
- Machine Learning, Mining Massive Datasets, R Programming (Coursera)
- Introduction to Big Data with Apache Spark, Scalable Machine Learning (edX)
- Oracle Server 8i and 9i: 2 Exams for Oracle Certified Professional Track

Conference Articles

Minh Ngo, Fabio Massacci, Dimiter Milushev Frank Piessens. Runtime enforcement of security policies on black box reactive programs. Proceedings of the *42nd Symposium on Principles of Programming Languages*, 15 – 17 January 2015. Mumbai, India.

Dimiter Milushev and Dave Clarke. Incremental hyperproperty model checking via games. Proceedings of the *18th Nordic Conference on Secure IT Systems*, 18 – 21 October 2013. Ilulissat, Greenland.

Dimiter Milushev and Dave Clarke. Towards incrementalization of holistic hyperproperties. Proceedings of the *First international conference on Principles of Security and Trust*, 24 March – 1 April 2012. Tallinn, Estonia.

Dimiter Milushev, Wim Beck and Dave Clarke. Noninterference via symbolic execution. Proceedings of *FMOODS & FORTE 2012*, 13 – 16 June 2012. Stockholm, Sweden.

Dimiter Milushev and Dave Clarke. Coinductive unwinding of security-relevant hyperproperties. Proceedings of the *17th Nordic Conference on Secure IT Systems*, 31 October – 2 November 2012. Karlskrona, Sweden.

Journal Articles

Gamze Ates, Giuseppa Raitano, Melissa Van Bossuyt, Philippe Vanparys, Birgit Mertens, Christophe Chesne, Alessandra Roncaglioni, Dimiter Milushev, Emilio Benfenati, Vera Rogiers, Tatyana Y. Doktorova. In silico tools and transcriptomics analyses in the mutagenicity assessment of cosmetic ingredients: adding weight to the evidence? *Mutagenesis* (Accepted, February 2016). 2016.

Gamze Ates, Birgit Mertens, Christophe Chesne, Dimiter Milushev, Vera Rogiers, Tatyana Y. Doktorova. Fast, reliable and efficient qPCR-array for genotoxicant detection. (In preparation) 2016.

Language Skills

Bulgarian (native), English (fluent), German (very good, passed Goethe Institute's Zentrale Oberstufenprfung), Dutch (basic), French (basic).

Hobbies

Photography, Guitar, Hiking.

References

Dave Clarke
Associate Professor, KU Leuven and Uppsala University
dave.clarke@it.uu.se

Dieter Gollmann
Associate Professor, Technische Universität Hamburg-Harburg
diego@tuhh.de

Alexandra Silva
Assossiate Professor, University College London
alexandra.silva@ucl.ac.uk