

PERSONAL INFORMATION

Sebastian Banescu



📍 Hochbrücker Weg 2, 85396 Eching, Germany

☎ (+49) 176 4152 5239

✉ banescusebi@gmail.com

🌐 de.linkedin.com/in/sebastianbanescu

EDUCATION AND TRAINING

Dates

October 2014 - onward

Position

Graduate student

Name of organization

Technical University of Munich, Germany, Center for Doctoral Studies in Informatics and its Applications (CeDoSIA) Graduate School

Dates

September 2010 - August 2012

Title of qualification awarded

MSc. Computer Science and Engineering - Information Security Technology graduated "cum laude" (GPA: 8.5 of 10, Thesis: 9 of 10)

Scholarship

Talent Scholarship Program, currently Amandus H. Lundqvist Scholarship Program

Name of organization

Technical University of Eindhoven, The Netherlands, Faculty of Computer Science

Dates

October 2006 - July 2010

Title of qualification awarded

BSc. Computer Science and Engineering (GPA: 9.5 of 10, Thesis: 10 of 10)

Scholarship

Merit-based and Performance-based scholarships due to academic results

Name of organization

Technical University of Cluj-Napoca, Romania, Faculty of Automation and Computer Science

RESEARCH VISITS

Dates

February-March 2016

Position

Visiting Research Scholar worked with Prof. Dr. Saumya Debray and Prof. Dr. Christian Collberg on characterizing obfuscation strength via case-studies using ELF x86 binaries.

Name of organization

University of Arizona, Tucson, USA, Faculty of Computer Science

Dates

September 2015

Position

Visiting Research Scholar worked with Prof. Dr. Vijay Ganesh on employing symbolic execution and SAT/SMT solvers for the purpose of de-obfuscating ELF x86 binaries.

Name of organization

University of Waterloo, Canada, Department of Electrical and Computer Engineering

Dates

June 2009 - September 2009

Position

ERASMUS Exchange student worked with Prof. Dr. Florent de Dinechin. Developed a high precision multiplication operators for FPGA chips. Mainly used C/C++ to generate VHDL.

Name of organization

Ecole Normale Supérieure Lyon, France, Laboratoire de l'Informatique du Parallélisme

WORK EXPERIENCE

Dates

April 2013 - onward

Position

Researcher / Teaching Assistant - member of Software Engineering Chair

Employer

Technical University of Munich, Germany - Faculty of Informatics

Responsibilities

Research in the field of software protection, collaborated with Google Chrome security teams, developed solutions against browser hijacking malware in C/C++. Teaching assistance for MSc. and BSc. level courses, for 6 semesters. Co-developed "Secure Coding" lecture, which was awarded the TUM prize for teaching excellence. Advised over 15 MSc. and BSc. theses, many of which concluded with peer-reviewed publications; more details at <https://www22.in.tum.de/banescu>

Dates	September 2012 - March 2013
Position	Security Engineer - member of Digital Video Broadcast team
Employer	TP Vision, The Netherlands - Innovation Site Eindhoven
Responsibilities	Secure design, integration and testing of key management, DRM, copy and content protection systems. Developed specifications for ARM TrustZone integration of the afore mentioned systems. Mainly used C/C++. Assessed compliance and robustness rules for new systems.
Dates	February 2012 - August 2012
Position	Master Thesis Intern - member of the T-Clouds project team
Employer	Philips Research, The Netherlands - Healthcare Information Management, Security Cluster
Responsibilities	Developed secure logging and log aggregation module for the TClouds project co-financed under EU FP7 and obtained patent US20160134495 for it. Developed a privacy infringement detection and quantification tool and published 2 peer-reviewed papers about it. Mainly used Java.
Dates	July 2011 - November 2011
Position	Intern Student - member of Security & Privacy team
Employer	Deloitte, The Netherlands - Enterprise Risk Services
Responsibilities	Manual and (semi-)automated penetration testing of web-applications. Developed a privacy escalation testing tool as a script for OWASP WebScarab. Developed a password brute-forcing script for iMacros FF and IE plug-in. Mainly used PHP.

PEER-REVIEWED PUBLICATIONS

- 1 Ochoa, M; **Banescu, S**; Disenfeld, C; Barthe, G; Ganesh, V; *Reasoning about Probabilistic Defense Mechanisms against Remote Attacks*. To appear in Proc. of 2nd IEEE European Symposium on Security and Privacy (EuroS&P), 2017
- 2 **Banescu, S**; Collberg, C; Ganesh, V; Newsham, Z; Pretschner, A; *Code Obfuscation Against Symbolic Execution Attacks*. To appear in Proc. of 32nd Annual Computer Security Applications Conference (ACSAC), 2016
- 3 Salem, A; **Banescu, S**. *Metadata Recovery From Obfuscated Programs Using Machine Learning*. To appear in Proc. of the 6th Software Security, Protection and Reverse Engineering Workshop (SSPREW@ACSAC), 2016
- 4 **Banescu, S**; Lucaci, C; Krämer, B; Pretschner, A; *VOT4CS: A Virtualization Obfuscation Tool for C#*. In Proc. of 2nd International Workshop on Software Protection (SPRO@CCS), 2016
- 5 Ibrahim, A; **Banescu, S**; *StlIns4CS: A State Inspection Tool for C#*. In Proc. of 2nd International Workshop on Software Protection (SPRO@CCS), 2016
- 6 Holling, D; **Banescu, S**; Probst, M; Petrovska, A; Pretschner, A; *Nequivack: Assessing mutation score confidence*. In Proc. of 9th International Conference on Software Testing, Verification and Validation Workshops (ICSTW), 2016
- 7 **Banescu, S**; Wuechner, T; Salem, A; Guggenmos, M; Ochoa, M; Pretschner, A; *A Framework for Empirical Evaluation of Malware Detection Resilience Against Behaviour Obfuscation*. In Proc. of 10th International Conference on Malicious and Unwanted Software (MALWARE), 2015
- 8 Fedler, R; **Banescu, S**; Pretschner, A; *ISA2R: Improving Software Attack and Analysis Resilience via Compiler-Level Software Diversity*. In Proc. of 34th International Conference on Safety, Reliability, and Security (SAFECOMP), 2015
- 9 Ganesh, V; **Banescu, S**; Ochoa, M; *The Meaning of Attack Resistant Systems*. In Proc. of the 10th Workshop on Programming Languages Analysis for Security (PLAS@ECOOP), 2015
- 10 **Banescu, S**; Ochoa, M; Pretschner, A; *A Framework for Measuring Software Resilience Against Automated Attacks*. In Proc. of the 1st International Workshop on Software Protection (SPRO@ICSE), 2015
- 11 **Banescu, S**; Pretschner, A; Battre, D; Cazzulani, S; Shield, R; Thompson, G; *Software-Based Protection against "Changeware"*. In Proc. of the 5th ACM Conference on Data and Application Security and Privacy (CODASPY), 2015
- 12 **Banescu, S**; Ochoa, M; Kunze, N; Pretschner, A; *Idea: Benchmarking indistinguishability obfuscation - A candidate implementation*. In Proc. of the International Symposium on Engineering Secure Software and Systems (ESSoS), 2015
- 13 **Banescu, S**; Petkovic, M; Zannone, N; *Measuring Privacy Compliance Using Fitness Metrics*. Proc. of the 10th International Conference on Business Process Management (BPM), 2012
- 14 Pieters, W; **Banescu, S**; Posea, S; *Preventing system abuse by service composition*. Proc. of the Third International Engineering Systems Symposium (CESUN), 2012

- 15 **Banescu, S**; Zannone, N; *Measuring privacy compliance with process specifications*. Proc. of the 7th International Workshop on Security Measurements and Metrics (MetriSec), 2011
- 16 Suciu, A; **Banescu, S**; Marton, K; *Unpredictable random number generator based on hardware performance counters*. Digital Information Processing and Communications, 2011
- 17 **Banescu, S**; de Dinechin, F; Pasca, B; Tudoran R; - *Multipliers for Floating-Point Double Precision and Beyond on FPGAs*. Proc. of the 1st International Workshop on Highly Efficient Accelerators and Reconfigurable Technologies (HEART), 2010
- 18 Tudoran, R; **Banescu, S**; Cret, O; Suciu, A; - *Implementing True Random Number Generators by Overfilling the FPGA Chip*. Proc. of the FPGA World 2009 International Conference, 2009
- 19 Colesa, A; Tudoran, R; **Banescu, S** - *Software Random Number Generation Based on Race Conditions*. Proc. of the 10th International Symposium on Symbolic and Numeric Algorithms for Scientific Computing, September (SYNASC), 2008

PERSONAL SKILLS AND COMPETENCES

Mother tongue(s) Romanian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	Advanced (C2)	Advanced (C2)	Advanced (C1)	Advanced (C1)	Advanced (C1)
German	Intermediate (B2)	Intermediate (B2)	Intermediate (B1)	Intermediate (B1)	Intermediate (B1)

Programming and Scripting Languages

Intermediate: Java, C, R, x86 Assembly, Bash Script, C++, Python
Beginner: C#, VHDL, Matlab, Prolog, Haskell, ML, Lisp

Web Technologies

Intermediate: PHP, HTML, JavaScript, CSS, AJAX, XML

Black-Box Testing Tools

Beginner: Nessus, Burpsuite, ZAP, Wireshark, Sqlmap, Zenmap

White-Box Testing Tools

Intermediate: KLEE, S2E
Beginner: Fortify, RIPS, FindBugs

Reverse Engineering

Intermediate: IDA Pro, GDB, angr, Triton, JavaDecompiler

Integrated Development Environments

Intermediate: Eclipse, MS Visual Studio
Beginner: vim, Matlab, Xilinx ISE

SCM Tools

Intermediate: Subversion (SVN), Git

DBMS

Intermediate: MySQL, MS SQL Server

Soft Skills

Great Communication Skills, Team Player, Detail Oriented, Public Speaking & Presenting

MISCELLANEOUS

Activities

- Contributor to **Google Syzygy** open source project <https://github.com/banescusebi>
- Member of the “kopipacket” team comprising of researchers at the Technical University of Munich and the Singapore University of Technology and Design, which regularly achieves **top 5% rankings in capture the flag (CTF) competitions**
 - **Invited speaker** at Itestra GmbH Jour Fixe, December 2016, Munich Germany
 - **Invited speaker** at Friedrich-Alexander Universität (FAU) Erlangen by Prof. Dr.-Ing. Felix Freiling, September 2016, Erlangen Germany
 - **Invited trainer** at “Software Protection Workshop” organized by Dolby Germany, August 2016
 - **Winner of “Best Code Cracker of ISSISP 2014”** award at the International Summer School on Information Security and Protection, July 2014, Verona, Italy
 - Participated in various **mathematics and informatics olympiads and contests** at county and national levels. Obtained notable awards including **1st, 2nd and 3rd prizes** (1998-2006)

Volunteer Work

Volunteer IT Consultant for League of Romanian Students Abroad (2010-2012)
 Volunteer in civic cleaning campaigns in my home town (1998-2006)

Recommendations

Upon request from Prof. Dr. Alexander Pretschner, e-mail: alexander.pretschner@tum.de
 Other 9 recommendations already available on LinkedIn: de.linkedin.com/in/sebastianbanescu

Hobbies

Traveling, Snowboarding, Football, Hiking, Board games, Movies, Music