

Darius-Andrei Suciu

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Education

- 2015 - PhD in Computer Science, Stony Brook University, U.S.A. (in progress)
GPA: 3.98/4
- 2010 - 2014 B.S. in Computer Science, Technical University of Cluj-Napoca, Romania
Undergraduate thesis: "Unsupervised Aspect Based Opinion Mining Using Double Propagation"

Work experience

- 2016 - **Graduate Research Assistant** at Stony Brook University, U.S.A.
Research Assistant in the NSAC lab, working with Radu Sion
- 2019-2020 **Research Intern** at Samsung Research America, U.S.A.
Research Intern in the KNOX lab, helping with increasing the security of Samsung mobile devices (8 months)
- 2018 **Summer Research Intern** at Samsung Research America, U.S.A.
Research Intern in the KNOX lab, helping with increasing the security of Samsung mobile devices (3 months)
- 2015 - 2016 **Graduate Teaching Assistant** at Stony Brook University, U.S.A.
Graded exams, homeworks and projects and helped students in Software Engineering and Computer Science II
- 2013 - 2015 **.NET developer** at Techromix INC, Cluj-Napoca, Romania
Responsible with developing parts or entire software solutions for e-commerce websites and finance applications
- 2012 **Junior Java developer** at Ullink, Cluj-Napoca, Romania
Responsible with developing part of a trading application and integration testing

Publications

- Darius Suciu**, Michael Ferdman, Radu Sion, "DroidShield: Protection from Untrusted APPS and OSes DroidShield", **under submission**
- 2020 **Darius Suciu**, Stephen McLaughlin, Laurent Simon, Radu Sion, "Horizontal Privilege Escalation in Trusted Applications", the 29th Usenix Security Symposium
- 2018 **Darius Suciu**, Stephen McLaughlin, Hayawardh Vijayakumar, Lee Harrison, Michael Grace, Amir Rahmati, "Poster: Automatic Detection of Confused-Deputy Attacks on ARM TrustZone environments", the 2018 IEEE Cybersecurity Development Conference

- 2016 Chen Chen, **Darius Suci**, Radu Sion, "Poster: KXRay:", the 2016 ACM SIGSAC Conference
- 2016 **Darius Suci**, Radu Sion, "Poster: DroidShield", the 2016 ACM SIGSAC Conference
- 2014 **Darius Suci**, Alexancru C. Cosma, Vlad V. Itu, Mihaela Dinsoreanu, Rodica Potolea, "Learning good opinions from just two words is not bad", the 6th International Conference on Knowledge Discovery and Information Retrieval
- 2014 Vlad V. Itu, **Darius Suci**, Alexandru C. Cosma, Mihaela Dinsoreanu, Rodica Potolea, "Overcoming the domain barrier in opinion extraction", Intelligent Computer Communication and Processing Conference

Projects

- 2018 – **ONR**: An investigation of TrustZone's "Secure World" binaries and development of a formal methodology and automated binary investigation tool, which together aim to evaluate the security of "Secure World" components and automatically detect and present those components vulnerable to confused-deputy or collusion attacks
- 2019 – 2020 **HOOPER**: An investigation of the TrustZone's "Secure World" environment and its communication with the rich execution environment (Android). Discovered a new class of attacks that enable horizontal privilege escalation, analyzed their impact and built a detection tool that can automatically indicate the presence by analyzing Trusted Application binaries
- 2016 – 2018 **DroidShield**: A security solution based on the ARM TrustZone technology, which provides applications with private access to memory regions, where they can store sensitive data, outside the reach of malicious root users/attackers
- 2016 - 2017 **KXRay**: A Hypervisor-based security solution for tracking memory accesses made in an OS and analyzing them using a machine learned based approach to identify hidden processes
- 2016 **ROPBuilder**: Developed a C application which can automatically construct an ROP chain from application code and use it to provide the user root privileges
- 2015 **ClinicalDecisionDB**: Designed a SQL database and Java application interface to access it for managing cancer patients data in a hospital and predicting patient survival chance based on data collected
- 2015 **JOS**: Built a minimal OS from an incomplete JOS skeleton code. Added OS page table management, interrupt handling, file I/O and a network driver
- 2013 - 2014 **Opinion Extractor**: Developed a Java application for extracting opinion words and the product features related to them from reviews texts automatically, based only on grammar rules
- 2013 **Movie Review Sentiment Extractor**: Developed a Java application for extracting the feelings expressed in movie reviews using machine learning techniques

Certificates

Oracle: Database Programming with PL/SQL, Database Design and Programming with SQL

Technical Skills

Key Skills: System development, UNIX and bootloader programming, full stack .NET development

Languages: C#, C/C++, Java, Python, SQL/PLSQL, Javascript, JQuery, Html

Databases: Microsoft SQL Server, MySQL, Oracle, MongoDB

Technologies: ARM TrustZone, .NET MVC, .NET Web Forms, Angular JS, Web API, Rest and SOAP, Dependency Injection, EpiServer Commerce, EpiServer CMS

Honour and Awards

- 2015-2016 Awarded CS chair fellowship at Stony Brook University
- 2016 Awarded NSF travel grant for CCS
- 2014 Best paper at Technical University of Cluj-Napoca and Babes-Bolyai University scientific papers student conference
- 2013 2nd place in Imprezzio Software Contest 5th edition organized by Imprezzio Global
- 2009 1st place in idea contest organized by "Politehnica" University of Timisoara