

Bertrand STIVALET

Security Engineer



French - 27 years old
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PROFESSIONAL EXPERIENCE

National Institute of Standards and Technology (NIST) Washington, DC, USA

2013 - 2016
3 years

Security Engineer

+ Static Analysis Tool Exposition – samate.nist.gov/SATE.html

Studied how source code security analyzers react facing a large range of known vulnerabilities in C/C++, JAVA and PHP. Created data set. Operated security tools. Analyzed their reports. Computed metrics (precision, recall, coverage, overlap). Wrote guidance and reports. Worked with international private companies.

+ Vulnerability Test Suite generators – github.com/stivalet/

Designed, Led and Managed the project from the beginning to the end. It generates ~50,000 synthetic test cases based on the OWASP Top 10 in PHP and C#. Tool vendors and researchers are already using the tool. Supervised 7 students.

+ Gave work presentations at NIST and external conferences (see *Publications* section).

2011 - 2013
1.5 years

C/C++ Developer

+ Hybrid CPU-GPU program for the Fourier-based image stitching

Developed a pipelined multi-threaded implementation of the Fourier-based image stitching of optical microscopy images: 7.7x speedup. Performed positive and negative testing during the implementation process.

May 2011
6 months

Obj-C Developer

+ Electronic Biometric Transmission Specification (EBTS) library

Developed an iOS library following the EBTS standard. It has been integrated into two FBI's projects: the Repository for Individuals of Special Concern project and the Fingerprints Comparison System project. Suggested improvement ideas for the standard.



PERSONAL PROJECTS

2016

Pentesting Tutorial Videos

+ Topics: Physical pentesting, Wireless pentesting, Vulnerability Assessment, Exploit development

Translating EN -> FR videos' subtitles for Cybrary.it

Self-studying to pass the C|EH and Security+ certifications

2015

The 'A Bug A Week' Challenge – abugaweek.com

+ Every week a flawed source code is published. The goal is to identify the threat and document it. The following week, the answer is published with the explanation and how to remediate it. Educative initiative to promote secure coding.

+ Designed, Planned, Coordinated and Implemented the challenge and the website.

Volunteered for BSides Security Conferences in the Washington DC area



SKILLS

General skills

- + Skilled in finding and identifying vulnerabilities and threads
- + Expertise in risk management
- + In-depth knowledge in IT security
- + Ability to learn and apply new technologies effectively
- + Responsive, organized and excellent problem solver

Technical skills

- + Security standards - NIST
- + IT Security: Vulnerability Assessment, Penetration Testing, Fuzzing, Reverse Engineering
- + Tools: Metasploit, Nmap, Nessus, BurpSuite
- + Languages: Python, C/C++, JAVA, PHP, Obj-C
- + Network: TCP/IP, HTTP, DNS, LDAP, OSI Model
- + Network security: IPSec, SSL, SSH, HTTPS
- + NVD, CVE, CWE
- + Windows/Linux/MacOs



PUBLICATIONS

SATE V Report (unpublished)

- + Aurelien Delaitre, Vadim Okun, Bertrand Stivalet, Paul E. Black
- + NIST Special Publication

Large Scale Generation of Complex and Faulty PHP Test Cases April 2016

- + Bertrand Stivalet, Elizabeth Fong
- + International Conference on Software Testing, Verification and Validation (ICST'16), Chicago, IL, USA
- + Selected as the BEST PAPER for the ICST16 tool demo track

Evaluating Bug Finders - Test and Measurement of Static Code Analyzers May 2015

- + Aurelien Delaitre, Bertrand Stivalet, Elizabeth Fong, Vadim Okun
- + Complex faULTs and Failures in LargE Software Systems (COUFLESS'15), Firenze, ITALY

CVE-selected Analysis Results Mars 2014

- + Bertrand Stivalet
- + SATE V Workshop, Gaithersburg, MD, USA



EDUCATION

2008 - 2011

TELECOM Nancy, University of Lorraine, FR

- + Master's degree in Computer Science with a major in Network & Security
- + Cisco CCNA 1, CCNA 2, CCNA 3
- + Test of English for International Communication (TOEIC)

2006 - 2008

IUT Nancy-Brabois, University of Lorraine, FR

- + Bachelor of Science with a major in Automated Systems and Industrial Networks



FOREIGN LANGUAGES

French ●●●●●

English ●●●●○



HOBBIES & INTERESTS

Traveling – Different cultures

Running (Marathon: 3h46)

DIY Hacking projects

References: available upon request