David Solodukhin

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EDUCATION

Georgia Institute of Technology - Atlanta, GA **Aug 2016 – May 2020**

B.S. in Computer Science

EXPERIENCE

Amazon Lab126 – Sunnyvale, CA **Sept – Nov 2019**

Software Development Engineer Intern – Consumer Devices

- Designed a high performance, adaptive and portable service to stream and transcode sensor data from a prototype consumer electronic device. This service allowed developers to more quickly diagnose low-level sensor issues and decreased reliance on device storage for storing debugging information. (js, C++)

VMware – Palo Alto, CA **May – Aug 2019**

Software Engineer Intern – VM Platform

- Designed and built a scalable, container-runtime independent solution for managing containers running in a Linux virtual machine. This solution efficiently gathers container stats/info by communicating directly with the exposed Linux kernel APIs which make containerization feasible. (C, Golang)

Prudential Financial – Newark, NJ **May – Aug 2018**

Software Engineer Intern, Enterprise Services & Systems

- Added several features to an internal metadata management system, enabling lower query latency and more query protocols. Expanded on the existing frontend (JSP) and rewrote Struts2 functionality in Spring(Web).
- Reduced daily build time of this system by several hours with multi-module Maven build scripts that automate building Oracle ADF applications.

Georgia Tech Database Research Group – Atlanta, GA **Feb – May 2019**

Undergraduate Researcher – Dr. Joy Arulraj – Accelerating Data Analytics using Logical Zone Maps

- Aided in designing new logical indexing structures used for caching statistical aggregates for subsets of data. Implemented mock dbms components such as a mixture model engine which would evaluate new indexing techniques as well as support approximate query processing. (C++)

College of Computing – Atlanta, GA **Jan – May 2019**

Undergraduate Teaching Assistant – Design and Analysis of Operating Systems

- Taught students operating systems concepts and kernel programming. Graded and maintained assignments.

Institute for Information Security and Privacy - Georgia Tech **Oct 2017 – Oct 2018**

Undergraduate Researcher – Dr. Taesoo Kim – Fuzzification: Anti-Fuzzing Techniques

- Designed and evaluated anti-fuzzing techniques to slow down modern fuzzers and protect software from malicious fuzzing.
- Wrote LLVM passes in C++ to implement anti-fuzzing techniques in existing Linux executables.
- Automated source-code instrumentation, unit testing of anti-fuzzing methods as well as analysis and plotting of fuzzing statistics with Python.

PROJECTS, PUBLICATIONS

- Jinho Jung, Hong Hu, **David Solodukhin**, Daniel Pagan, Kyu Hyung Lee, and Taesoo Kim. **Fuzzification: Anti-Fuzzing Techniques**. *In Proceedings of the 28th USENIX Security Symposium (Security 2019)*, Santa Clara, CA, August 2019.
- **Linux Kernel Modules** (kernel v4.15.18): Developed a module which starts a kernel daemon for transmitting O.S. stats. Implemented a kernel module for network traffic artificial throttling and proxy. (C)
- **Wolfram Alpha Bug:** Found SSRF vulnerability in Wolfram Alpha's api giving access to premium features for free. Contacted WA team and exploit was patched.

SKILLS

Languages: C++, C, Java, Golang, Javascript, Python, (PL)SQL, x86/64 ISA (GAS, FASM)

Systems, Technologies/Tools: LLVM, OpenMP, MPI, Docker, Kubernetes, libcontainer, KVM/QEMU, libvirt, C/ Make, Maven, Gradle, Android SDK/NDK, Jenkins/Travis CI, Git, Reverse Engineering, fuzzing, SDDC, HCI, AWS:LightSail/EC2, IDA/Ghidra, Nodejs, Flutter, Virtualization, reactjs, ROS

Foreign Language: Russian; Native Fluency