DAVID SOLODUKHIN

U.S. Citizen | 914-564-8872 | david.solodukhin@gmail.com

EDUCATION

Georgia Institute of Technology - Atlanta, GA **Grad. Apr 2020**

Candidate for B.S. in Computer Science

GPA: 3.96/4.0

Orgs: Grey Hat Security CTF team: web exploit engineer, Collegiate Cyber Defense Competition Team, Linux Users Group; Phi Kappa Theta (ΓΤ) Fraternity– I.T. Chair

EXPERIENCE

VMware – Palo Alto, CA **May 2019 – 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 2018 – Aug 2018**

Software Engineer Intern, Enterprise Services & Systems

- Added several features to an internal metadata management system, enabling lower query latency and a wider array of query protocols.
  - Added frontend features using ReactJS (previously JSP) and rewrote Struts2 MVC functionality in Spring MVC(Web).
- Reduced daily build time of MMS system by several hours with multi-module Maven build scripts that automate building of Oracle ADF applications.

Georgia Tech Database Research Group - Georgia Tech **Feb 2019 – 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 - Georgia Tech **Jan 2019 – May 2019**

Undergraduate Teaching Assistant – Design and Analysis of Operating Systems

- Responsibilities consist of grading, hosting office hours to help students understand key operating systems concepts and learn kernel programming.

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

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

- Designed and evaluated new 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**.
- Revised and edited final paper which was accepted into USENIX(2019)

PROJECTS – GITHUB.DAVIDTHATS.ME

- Jinho Jung, Hong Hu, **David Solodukhin**, Daniel Pagan, Kyu Hyung Lee, and Taesoo Kim. **Fuzzification: Anti-Fuzzing Techniques** (to appear). *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 UDP server process within the kernel for transmitting O.S. filesystem, process stats. Implemented a kernel module for network traffic artificial throttling and packet proxy. Modules were written in 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, SCons, Maven, Gradle, Android SDK/NDK, Google Test, Jenkins/Travis CI, Git, Reverse Engineering, fuzzing, SDDC, HCI, AWS:LightSail/EC2, IDA/Ghidra, Struts2, Nodejs, Flutter, JSP, Virtualization.

Foreign Language: Russian; Native Fluency