

# DAVID SOLODUKHIN

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## 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 – Present**

***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](https://github.com/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