David Solodukhin

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EDUCATION

Georgia Institute of Technology - Atlanta, GA   **Aug 2016 – May 2020**
B.S. in Computer Science

EXPERIENCE

Facebook – Menlo Park, CA   **July 2020 – Present**
Production Engineer – Network Infrastructure Security Engineering
- Developing and scaling internal DDoS detection and mitigation systems which span transport to application specific network layers. Supporting efficient analytics & anomaly detection services across millions of hosts. Helping implement reliable detection methods and investigating metrics which aid in classifying network anomalies as attacks or pathologies/regressions.

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.

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.

Prudential Financial – Newark, NJ   **May – Aug 2018**
Software Engineer Intern, Enterprise Services & Systems
- Improved reliability and efficiency of internal metadata management system, significantly reducing query response latency. 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.

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 and visualization of fuzzing stats.

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.
- **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, Python, Java, Golang, (PL)SQL, Javascript, x86/64 ISA (GAS, FASM)
Systems, Technologies/Tools: LLVM, OpenMP, MPI, Docker, Kubernetes, libcontainer, KVM/QEMU, libvirt, Android SDK/NDK, Git, Reverse Engineering, fuzzing, SDDC, HCI, AWS:LightSail/EC2, Virtualization
Foreign Language: Russian; Native Fluency