Bailey Defino

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G: github[DOMAIN]com[PATH]bdefino
T: [NUMBER REDACTED]
W: bdefino[DOMAIN]github[DOMAIN]io

US Citizen

Correctness, efficiency, minimalism, and security. Not in that order.

Current Position

2019- **Undergraduate Research Assistant**, PragSec Laboratory, Stony Brook University

Leading development of a browser extension for the detection of and defense against JavaScript credit card skimmers. Investigating the scope of the problem and evaluating the proposed solution.

Education

Exp. 2021 **BS in Computer Science**, Stony Brook University

2017 **Advanced Regents Diploma**, [CITY REDACTED] Central High School

Courses

Graduate	Undergraduate
Distributed Systems (auditing)	**Advanced Systems Programming in UNIX/C**
Seminar in Computer Security (audited)	**Algorithms**
	Offensive Security
	Operating Systems
	Software Engineering

Skills

Languages		Tools		Systems		Architectures	
Python	**6 years**	**Git**	**3 years**	**Linux**	**6 years**	MIPS	1 year
C	**2 years**	**GDB**	**1 year**	Windows	2 years	x86	6 months
POSIX Shell	**2 years**	Runit	3 years				
Java	2 years	Make	1 year				
JavaScript	1 year	LaTeX	6 months				
R	1 year	Kbuild	3 months				
		Docker	1 month				
		Valgrind					

Projects

2020- **Personal Computer**

Designing a confidential, trivially-verifiable computer from circuits to userland. Founded upon full exploitation of compartmentalization, virtualization, and defense in depth. Stack includes a from-scratch ISA (128-bit, N-virtual address space), VM, assembler, kernel, and userspace. For eventual use on an FPGA.

2019- **Loose Cluster**

Coding a decentralized clustering framework based on decomposition and convolution. Features include automatic peer detection, transparent redundancy (for fault tolerance and operating with untrusted peers), and processing of arbitrary tasks. By design, the task subsystem permits self-modification at runtime.

2019- **Anonymized Private Messenger**, with O. Sheekey (oishish[DOMAIN]github[DOMAIN]io)

A cryptography-oriented subscription system for maintaining message confidentiality, integrity, and receiver anonymity over a trustless network. Performs on both served and serverless (LAN) environments.

2020 **Multithreaded Producer/Consumer Model**,
bdefino[DOMAIN]github[DOMAIN]io[PATH]pc[EXTENSION]html

A lightweight C task parallelization library geared towards daemons, servers, vulnerability scanners, and web spiders. Promotes high availability and low latency through support for multipart (reconsumable) tasks.

2019 **Linux LKM Rootkit**, with B. Valarezo, J. Wong, and J. Liu.
github[DOMAIN]com[PATH]bvalarezo[PATH]rootkit

Developed an extensible core for maintaining covert superuser access. Sharpened teamwork skills and developed a more sophisticated understanding of operating systems.

Grants, Honors, & Awards

2017 **Computer Science Scholarship**, [CITY REDACTED] Central High School

Appointments Held

Summer 2020 **Undergraduate Research Assistant**, [CITY REDACTED]

Developed a browser extension for detecting and defending against JavaScript credit card skimmers. Amassed and analyzed wild samples.

Summer 2019 **Property Manager**, London, UK

Managed and directed the renovation of an old apartment. Documented faults and assessed solutions at a new property.

References

Nikiforakis, Nick. **Assistant Professor**, Department of Computer Science, Stony Brook University.
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Amin Azad, Babak. **Graduate Research Assistant**, PragSec Laboratory, Stony Brook University
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