

# BAILEY DEFINO

E: bdefino[USER]cs[DOMAIN]stonybrook[DOMAIN]edu  
G: github[DOMAIN]com[PATH]bdefino  
T: [NUMBER REDACTED]  
W: bdefino[DOMAIN]github[DOMAIN]io

[ADDRESS REDACTED]

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
Seminar in Computer Security (audited)	Advanced Systems Programming in UNIX/C 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	L <sup>A</sup> T <sub>E</sub> X	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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