

SEAN LEVY AKA ATTILA

Celestún, Yucatán, MÉXICO

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Experience

Co-Founder

October 2017 - March 2024

clearops.io

New York, NY (Remote)

- Built internet-scale data collection system focused on privacy and infosec using **PostgreSQL**, **Perl**, **Python** and **Selenium**
- Database contained hundreds of millions of attributes extracted from full HTTP transaction logs, over tens of thousands of core domains, e.g. **usatoday.com** and 300+ domains it depends on to load
- Used **PL/pgSQL** to implement data analysis engine inside the database
- Full web interface with completion-based UX to visualize and search domain privacy/infosec reports derived from the raw data
- Implemented **JWT**-based authentication system that integrated seamlessly with **AWS IAM**

Part-time contractor

November 2015 - 2017

Manicube.com

New York, Connecticut (Remote)

- Managed cloud infrastructure and DevOps pipeline for a small startup using both **AWS Web Console** and open-source command-line tools
- Aided in debugging, performance analysis and implementation of new features in **Python** codebase using **Django**, **SQLAlchemy**, **JavaScript**
- Implemented **Nagios** across all functional units, with custom probes and the modern Nagios interface

Open Source Work

September 2014 - 2017

OpenBSD, Tor Project

Remote

- Ported **Tor Browser** to **OpenBSD**
- Wrote driver for the Araneus Alea II USB TRNG, got it accepted into tree as an outside contributor
- Ported tests from **NetBSD** to **OpenBSD** for some userspace programs that lacked tests
- Participated in deep-dive audit of the widely-used mandoc code base

Software Engineer

July 2012 - August 2014

kWantera, LLC

Pittsburgh, PA, USA (Remote)

- Architected and implemented client-facing portal, deeply chartist design using **d3** and **nvd3** in the client and **Python**, **MongoDB** and **MySQL** on the back end. Mastered and used every level of the **Flask** framework on the server side and used **WebSockets** and **Green Threads** to make the site highly reactive
- Re-designed and implemented back-end data collection system that handled every ISO in North America
- Designed and delivered a MODBUS sensor component that updated per-client electricity demand by reading their industrial electric meters, using **PyModBus**
- Integrated and delivered continuously-updated client demand data that integrated seamlessly with system load and price data for enabling analytical product development in **Rlang** by a team of statisticians implementing leading-edge energy market arbitrage

Chief Architect

January 2007 - June 2012

Lytix LLC

Fully Remote Team: CDMX, Celestún, San Jose, Seattle, Salt Lake City, Helsinki

- *Google Maps for Finance*: semantically-aware graph database and analytical back end with P2P-oriented API using **JSON** over **Protocol Buffers** and **HTTP**. Finance/Law ontology developed by experts to analyze and visualize all relationships between public companies
- Implemented hybrid bi-directional **JSON-RPC** to **Protocol Buffers** translator to enable sophisticated web-based graph visualization and analysis system called **K2**
- Delivered high performance graph algorithm implementations that scaled horizontally and vertically, and continuous access to up-to-date data extracted from Bloomberg and Thompson/Reuters in real time (special access licenses)

Perl Contractor

July 2004 - July 2006

The Clue Factory

Fully Remote

- Implemented major new features in Radio Research, Inc's survey and loyalty systems, used by thousands of simultaneous users and multiple languages on a daily basis
- Delivered real-time online publication, sales and delivery systems for small publishing house in Pennsylvania
- Many general contracting engagements, mostly in **Perl** but also **Python** and **C**
- "Database doctor," heavy familiarity with **PostgreSQL**, **OpenBSD**, **FreeBSD**, **Linux** and other, more obscure database and Unix varieties
- Delivered embedded solutions for novel medical devices in **C** for inventor in Pittsburgh, PA

Member of Technical Staff

June 2001 - July 2004

CERT/CC (now called US-CERT)

Pittsburgh, PA

- Delivered next-gen of the Incident Response Form (IRF) system using **PHP** and **JavaScript**, as a part of the **IODEF** standardization effort (led by CERT)
- Designed and implemented AirCERT, an open-source aggregator for Intrusion Detection System (IDS) data. Used to gather and analyze billions of IDS alerts from several Government domains including **nist.gov**
- Advised and wrote text for multiple CERT advisories based on major events of the day, *e.g.* glibc vulnerabilities

VP Engineering

March 2000 - April 2001

Halosoft Inc.

Pittsburgh, PA

- Worked on implementation of grammar-based virtual machine in **C++** and **Viva**, native language of the VM
- Ported **Viva** VM technology to MacOS, NeXTStep, other Unix-like operating systems of the day
- Developed demos on our tech that led to a \$2 million dollar bridge loan from Vinod Khosla
- Implemented core chat protocols and wrote test drivers to implement the Volano Chat benchmark on our virtual machine
- Worked on in-kernel mechanisms (Linux) to allow for high-performance load balancing in a tightly coupled cluster environment

Research Programmer

September 1998 - August 1999

Parallel Data Lab, Carnegie Mellon University

Pittsburgh, PA

- Contributed to in-kernel and userland aspects of the Network Attached Storage protocol being developed at the lab
- Implemented userland frequent sets demo using NASD drives

System Programming Team Lead

September 1996 - January 1998

Lycos, Inc.

Pittsburgh, PA

- Drove major benchmark from conception to completion resulting in saving Lycos a million dollars in unneeded hardware expenditures
- Implemented multi-threaded synthetic load generator in ANSI C on OSF/1, Digital Equipment Corporation's version of Unix on the super-scalar Alpha systems, used in benchmarks and as general debugging tool
- Implemented company-wide build system for all core products
- Managed a team of four programmers to build, maintain and run the company's log analysis system, which paid the bills
- Oversaw deployment of the company's advertising management system

Senior Research Programmer

1988 - September 1996

Engineering Design Research Center, Carnegie Mellon University

Pittsburgh, PA

- Designed and implemented Object-Oriented representation and library in C capable of wrapping around existing C++ systems to reflect their objects into an interpreted environment where they could be scripted, seamlessly
- Built a compiler for a SELF-derived OO programming language that could interact with component libraries written in multiple languages common in engineering applications
- Strong contributions to make publications, including a paper that was accepted to OOPSLA 1996
- Managed a team of grad students in their continuing project software contributions
- Delivered n-dim, an information modeling tool and environment

Tech Stack:

Python, Flask, PHP, Perl, Mojolicious/Mojo, NodeJS, TypeScript, Rust, Web Assembly, tauri, Git, PostgreSQL, PL/SQL, ANSI C, POSIX, GraphQL, Protocol Buffers, JSON-RPC, WebSockets, JWT