

Artemis Livingstone

@ ar.d.livingstone@gmail.com +447902160039 blog.anthrax.social @social-anthrax artemis-livingstone ctftime.org

Experience

CrowdStrike Jun 2024 — Sep 2024 (FT/PT)
Intelligence Analyst Intern (Advanced Research Team)

- Implemented automated patch analysis and n-day scanner for MacOS IPSW and OTA update files.
- Reverse engineered Apple's MacOS OTA update flow using the GDMF APIs and the Pallas method.
- Implemented dyld_shared_cache and kernelcache extraction and enrichment.

L3Harris Trenchant Sep 2022 — Aug 2023 (FT)
Software Engineer and Vulnerability Research Intern

- Researched iOS and Android apps using reverse engineering and exploitation techniques.
- Implemented a Git mirror for an isolated network in Python using FastAPI and Django, containerized using Docker.
- Set up basic DevOps workflows such as synchronized dependency management and CI pipelines.
- Refactored large inherited codebase to use a custom dynamic command handler. Added functionality by reverse engineering intercepted protobufs and further research.
- Additional details of research roles and further projects are under NDA. Limited additional information has been approved for verbal discussion on request.

D.E Shaw & Co. Jun 2022 — Sep 2022 (FT)
Systems Intern

- Developed policy for credential distribution and self-service credential resetting tools. Built in Rust and deployed using Kubernetes via Helmcharts.
- Developed libraries for Kerberos authentication as middleware/guards in the Rust-based Rocket.rs and Actix frameworks with a fellow intern.
- Added Kerberos support to Rust libraries, enabling communication with internal HashiCorp Vault instance.
- Optimised VOD administration tasks, implementing PowerShell and Bash tools by reverse engineering the admin API for Cisco Webex. Features included bulk recording search, download and user permission updates.

Sunday Group Inc. Jun 2021 — Jun 2022 (PT)
Security Consultant and Developer

- Built trust based cryptocurrency authorization system using Merkle Trees based off of BIP 098 in Rust.
- Audited server side Rust code using property based testing, manual review, and developed a set of fuzzing tools.

Projects

Dynamic CLI command registration library. (Python)
Uses decorators to create a tree of commands at runtime. Generates documentation using introspection with Python's type system and function attributes.

Poetry Environment Synchronisation.
Pre-commit plugin to synchronise dependencies via Git hooks. Deployed internally to all teams that using poetry.

CTF Focused DNS Server (Rust)
Created a concurrent DNS server using Rust. Facilitates DNS rebinding attacks by utilizing very low caching times.

Education

University Of Edinburgh Sep 2020 — Jul 2025
BSc (Hons) Computer Science - First Class

Introduction to Computer Systems: Introduction to binary representation, instruction sets, virtual memory, combinational logic, sequential logic, and processor structure.

Secure Programming: Focus on reasoning about vulnerabilities and common security pitfalls, and methods for identifying vulnerable patterns.

Introduction to Algorithms and Data Structures : Theory and practice of algorithms and data structures with a focus on proofs of correctness and complexity.

University of Pennsylvania Aug 2023 — Jul 2024
Exchange Year

Software Analysis: Implementing static and dynamic analysis tools for LLVM IR in C++ and Python.

Computer Operating Systems: Focus on concurrent distributed operations and atomics. Implementing a rudimentary threaded OS in C with FS and scheduler.

Networks and Security: Focus on OS/binary, cryptography, and web security.

Compilers: Focus on compilers in OCaml targetting LLVM .

Computer Organisation and Design: Focus on RISC-V and ARM assembly, and the design of a simple RISC-V processor in System Verilog.

Extracurricular

President of SIGINT	Sep 2024 — Sep 2025
President of CompSoc	Sep 2021 — Sep 2022
Social Secretary for SIGINT	Sep 2020 — Jun 2022
First year CompSoc representative	Sep 2020 — Sep 2021

Awards and Honors

Certificates

- GIAC Certified SANS Foundations.
- Completed RET2 Wargames.

CTFs

Organizers

- Top team worldwide in 2022.
- 3rd in DEFCON 31 Qualifiers and 6th in DEFCON 30 Finals.
- Personally came top ten in over 16 CTFs.

SIGINT

- 1st UK Hack the Box 2024-2025 Uni CTF.
- 1st Hack the Box 2020-2021 Uni CTF Qualifiers and Finals.
- 6th Hack the Box 2021-2022 Finals.
- Played over 30 CTFs with SIGINT in partnership with Cr0wn.

Skills

Languages: Python and Rust. Exposure to C, C++, Haskell, Ocaml.

Tools: Linux, shell scripting, PowerShell, Git and Docker. Experience with CI, K8S, Prometheus, Grafana, Protobufs.

Cyber security knowledge: Web security exploits; basic reverse engineering with IDA, Binary Ninja and Angr; fuzzing with persistent harnesses in AFL++; iOS app teardowns and internals.

Languages: Fluent in English and Russian.