







CHELSEA

MURGIA

DevSecOps / Cybersecurity expert

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ABOUT ME

Freelance with 3 years of experience with DevSecOps practices and information security for the aerospace/military industry and government institutions. My work mostly consists of developing security measures and ensuring operational infrastructure compliance to US/French national security guidelines in the context of services critical to national security such as satellite and radar systems, geolocation services, and weather forecasting.

I prefer working on penetration testing and web backend projects on cloud-based Red Hat Enterprise Linux ecosystems, with DevSecOps practices.

MES COMPÉTENCES

Cloud

Containers

Web

Dev

Sec

Ops

System

Network

Virtualization

Packaging

Guidelines

AWS, OpenStack

Docker, Kubernetes/OpenShift

Flask, Django, Node, FastAPI, backend

Python, Node.js, GitLab CI/CD, C

Pentest, HA, SAST, SIEM, OpenScap, Vault
Grafana/Prometheus, Ansible, Terraform

Red Hat Enterprise Linux

WALLIX, StormShield, Cisco

QEMU/KVM, libvirt, ProxMox

Python, RPM, Docker

French ANSSI, US DoD

CONFERENCES

- 2023 **Capitole du Libre** **Speaker**
Solo conference showcasing my molecular dynamics simulator "SENPAI". Title of the conference: "Simulations de dynamique moléculaire avec SENPAI"
- 2022 **Toulouse Hacking Convention** **Representative**
I represented my company at its booth during this local cybersecurity event.

CERTIFICATIONS

Ongoing **AWS Certified Cloud Practitioner** **Cloud**

EXPERIENCE AS A FREELANCE ENGINEER

- Pangio Technologies** **<https://pangio.tech>**
My company Pangio Technologies develops hardware and software solutions such as the FAP-R1 Forward Attack Platform. The FAP-R1 is a cybersecurity penetration testing device that allows the projection of existing attack capabilities to a given location.
- 6 months **DevSecOps / Cybersecurity expert** **<https://chelsea486mhz.fr>**
I started working as a freelance engineer. I participate in bug bounties and look for opportunities related to DevOps and cybersecurity.

EXPERIENCE WORKING FOR MÉTÉO FRANCE

2 months **DevSecOps** **Operation division**
On premises
In the context of the agency's transition to better development and security practices, I led the operation division's transition to an AGILE/DevSecOps model. Expectations were especially high considering the agency operated several supercomputing clusters as a critical component to the nation's sovereignty, and works closely with NATO's weather forecasting agency.

Supercomputers Belenos & Taranis, Kubernetes, Docker, Python, RHEL 9/8/6, RPM, WALLIX Bastion, StormShield

EXPERIENCE WORKING FOR VIVERIS TECHNOLOGIES

1 year Hybrid	<p>Information security engineer / DevSecOps Airbus Defence & Space + Viveris Technologies</p> <p>In the context of the development of new storage device decontamination systems for air-gapped areas, I took part in the development of a dedicated operating system based on CentOS 7, its migration to RHEL8, and designed the development infrastructure following DevSecOps practices. My work also consisted of designing custom microservices used in the CI pipelines for securely handling PGP secrets from Hashicorp Vaults in zero-trust environments. Some minor work included developing automated disk decryption systems based on TPM2 devices.</p> <p><i>RHEL 8, CentOS 7, DISA STIG, LUKS, Anaconda, RPM, Python, LXC, ClamAV, ESET, Proxmox, Docker, NGINX, GitLab, YubiKey</i></p>
3 months On premises	<p>Information security engineer / DevSecOps Viveris Technologies</p> <p>In the context of deploying a development infrastructure for a new client project, I worked on deploying a k3s cluster on OpenStack using Ansible, as well as implementing security solutions and secret storage on the cluster. I also deployed monitoring solutions for OpenStack following a security incident.</p> <p><i>Ansible, Cisco IOS, OpenStack, Kubernetes, Docker, Vault, Gitlab, Prometheus, Grafana, Python</i></p>
2 months On premises	<p>Information security engineer / DevSecOps Airbus Defence & Space</p> <p>As part of the deployment of a new geolocation service, I worked on integrating security systems within ground station infrastructures ensuring security and operational continuity in case of incidents in a system critical to national sovereignty and security.</p> <p><i>FreeRADIUS, 389-ds, Apache, SLES, OpenSSL, net-SNMP, RPM, VirtualBox, systemd, iptables</i></p>
7 months On client site	<p>Information security engineer / Governance Airbus Defence & Space GEO</p> <p>As part of the launch of a new imaging satellite constellation, I established security operation procedures for the various components of the main operations center (MOC), actively collaborating with the different teams responsible for the 36 different components to ensure the safe implementation of security procedures. I also aimed at providing tailored solutions to the needs of each team while maintaining compliance with the security governance requirements of the operations center. Subsequently, I participated in penetration testing campaigns to certify the overall compliance of the MOC to the previously established requirements.</p> <p><i>Governance, penetration testing</i></p>
3 months On premises	<p>Information security engineer / DevSecOps Airbus Defence & Space</p> <p>As part of updating a secure IT infrastructure across multiple client sites, I worked on developing and maintaining a security solution based on OpenSCAP that complies with the DISA STIG standards for securing workstations. This solution was designed to deploy ready-to-use secure CentOS/Red Hat systems from a single installation image, keeping the client protected from the latest applicable threats.</p> <p><i>CentOS, OpenSCAP, RPM, Python, DISA STIG</i></p>

EXPERIENCE WORKING IN OPEN-SOURCE PROJECTS

2022-2023	<p>Alma Linux Foundation https://almalinux.org/</p> <p>Active contribution to the security of the RHEL fork. As a member of the Alma Linux Foundation, I also distributed my SENPAI molecular dynamics simulator on Alma images. Alma Linux was the number 1 system in molecular dynamics performance.</p> <p><i>Enterprise Linux 8&9, RPM, RH kickstarts</i></p>
2019 - 2022	<p>Voron Design https://vorondesign.com/</p> <p>Active contribution to the Voron 2.4 Open-Source 3D printer project. My work mostly consisted of securely proxying the Moonraker API used by the Klipper firmware to enable remote control. I worked on developing secure proxying solutions that could not be easily implemented due to design choices from the Klipper project. I also documented the steps required to setup a secure reverse-proxy for the printer enabling remote control. <i>Python, websocket/S, HTTP/S, NGINX,</i></p>
2018 - 2023	<p>SENPAI Molecular Dynamics https://github.com/SENPAI-Molecular-Dynamics</p> <p>Development of the SENPAI molecular dynamics simulator. Collaboration with the IMRCP (Dr. Marty) and LPCNO laboratories. I presented my work on SENPAI in a 2023 conference at the Capitole Du Libre in Toulouse, France. SENPAI was one of the fastest molecular dynamics simulators before I discontinued development, rivalling solutions from the US National Nuclear Safety Agency..</p> <p><i>C, POSIX, sockets UNIX, TCP/IP, lots of complicated maths</i></p>

2022 (en cours) **RockyLinux-ANSSI-BP-028** <https://github.com/Chelsea486MHz/RockyLinux-ANSSI-BP-028>
Development and maintenance of secure Alma/Rocky forks (version 8 and 9) compliant to ANSSI-BP-028 security standards. Implementation of various security measures using OpenSCAP and shell scripts during installation. Distribution of zero-click installation images for both bare-metal systems and virtualized VirtIO systems.

Entreprise Linux 8&9, RPM, RH kickstarts, GRUB2, ISOLINUX, VirtIO, ANSSI-BP-028

2023 (en cours) **Stargazer Framework** <https://github.com/Chelsea486MHz/stargazer>
Framework allowing the design of particle physics supercomputers. Hardware-agnostic, scalable, and support atypical topologies, Stargazer Framework is a great tool for building massively-distributed CUDA or CPU supercomputers. Features token-based authentication and lots of documentation. Mostly aimed at astrophysics.

Python Flask, API design, Docker, Kubernetes, RPM, HPC

2023 (en cours) **Débat Politique as a Service (DPaaS)** <https://github.com/Chelsea486MHz/debat-politique-ia>
Highly complex system integrating several AI models in a cloud architecture. Allows for the on-demand generation of debates between programmable actors. I invested a lot of time into making the XTTSv2 model as efficient as possible, reducing required training data from 750MiB to 1.5MiB, effectively making voice generation faster than real time.

Python Flask, API design, Docker, AI LLM, AI TTS, AWS S3, CUDA

EDUCATION

2018-2020 **Undergraduate / Computation chemistry**
Université Toulouse III - Paul Sabatier, Toulouse, France

2017-2018 **Undergraduate / Computer science**
Epitech Toulouse

2014-2017 **Baccalauréat Général**
Lycée International Victor Hugo, Colomiers, France

I SPEAK

French - Native
English - Bilingual

IN MY FREE TIME

I play the guitar and violin.
I grow coral in my aquarium.