Gabriel Ravier

Looking for internship

CONTACT

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SKILLS

C and C++ - Expert
Linux – Expert
x86 assembly – Expert
Cybersecurity – Experienced
Reverse Engineering (IDA/Ghidra) – Highly experienced
Amazon Web Services (AWS) – Experienced
Git – Expert
CMake – Experienced
GNU Make – Expert
Penetration Testing – Intermediate
PostgreSQL – Intermediate
TypeScript (Node.js) - Intermediate

WORK EXPERIENCE

TrackIt — Apr 2023 – Aug 2023

Intern

I worked as a software engineer on TrackIt's security offerings, in particular on pentests and security assessments. I participated in 1 pentest and 3 security assessments.

I also worked on software, written in C++, Shell (and which uses TeX), which assists in the creation of security assessment reports. In particular, I wrote a program which automatically converts a report from the Prowler security tool into a far more human-readable PDF, and created a webservice, written entirely in TypeScript and using the AWS Cloud Development Kit, which allows one to use this program from a web-based interface hosted on AWS.

TrackIt — Jul 2021 – Dec 2021

Intern

I worked as a software engineer on TrackIt's flagship software offerings, TrackIt and Tagbot, primarily fixing bugs while also adding a number of new features.
I worked on both the backend and frontends with Go and JavaScript.

This also gave me significant experience with AWS, as these projects are made to help manage one's AWS accounts and thus involved a large amount of interaction with its API.
I also worked on several other minor projects which primarily involving AWS, which gave me further experience in working with it.
I also helped speed up the resolution of a few severe production problems.

Finally, I also participated in several deployments of the above software, which gave me some experience with Kubernetes.

NZUP — Jun 2018 – Jun 2018

Intern

I worked 4 weeks in this company as an intern, working to optimize their Go backend, through conversion of specific bottleneck functions to optimized C code to greatly improve their performance, along with larger scale architectural/toolchain changes to make the backend code generally faster.

PROJECTS

Epitech - AREA — Jan 2023 – Mar 2023

This was a project to write an implementation of an application alike to IFTTT and/or Zapier, in which users, from either their browser (through a web-based frontend) or from their phone (through a cross-platform Android/iOS application) could tie together Actions and Reactions from various services by creating Triggers.

A trigger ties together an action and a reaction together - such that when an action occurs, a given reaction results. For instance, a trigger could be that when an e-mail from is received from ones Gmail account, a message gets sent to a Discord channel, or that when one adds a track to a Spotify playlist, an email is sent through their Outlook account.

I did a very large majority of the backend work, which implemented all of the business logic (the frontends only serve as user interfaces that redirect requests to/from the backend server), implementing a total of 15 actions and 16 reactions across 17 different services.

I also implemented a formatting system with variable substitution, which allowed users to arbitrarily substitute in various different pieces of information from actions when specifying input to the reaction in their triggers (for instance, one might create a trigger that, when a new Astronomy Picture Of the Day is published by NASA, sends a message to a Telegram channel, specifying the contents of the message to be sent as "NASA's new picture of the day, '$(title)', has been published at $(url)!" which would correspondingly substitute in the title and URL of the picture as specified).

During the planning phase of the project, I was able to try out various other technologies before we settled on making the backend in TypeScript with Fastify, Prisma and PostgreSQL, such as C++ with cpp-httplib, Apache Cassandra, Python with Flask, MongoDB, PHP, MySQL, Ruby on Rails, SQLite, TypeORM

Epitech - Arcade — Mar 2022 – Apr 2022

This was a project to write a complicated “arcade-like” program that allows one to play various old games using a variety of different graphics library, all through a common interface. We decided to make it possible to use 4 different graphics libraries (including one

that works in text mode), SFML, OpenGL, SDL and ncurses, and remake two games, Pac-Man and Nibbler, which we both reproduced accurately.
The common interface was created by me and shared with all the other groups working on the same project at our school. As the interface separated games, graphics libraries and core executable, it was possible to use anyone's core executable with a game from another group and a graphics library from yet another group and have them all work together without issues.

I primarily worked on:
- The Pac-Man game implementation
- The core executable
- The ncurses graphics implementation
- Some parts of the SFML and SDL graphics implementation
- Sound handling across all graphics implementations
- Implementing a small C++ wrapper library for dynamic library handling (dlopen, dlclose, etc.)

Video of the project here: https://www.youtube.com/watch?v=yMk1y3bvGwQ

Epitech – Hydra and Chisel
Mar 2022 – Apr 2022, Nov 2022 – Dec 2022

These were two CTF projects where we were tasked with finding flags on various remote systems, with a total of 15 challenges hosted on the TryHackMe platform (i.e. they are similar to some of the challenges found there), specially created for the purpose of this project.

The challenges were focused around web-hosted services in various languages (i.e. most of the time web-based but with backends in e.g. Python/Node/PHP/Wordpress/etc, sometimes involving other web-accessible services like FTP or NFS) in which one had to find a vulnerability in order to get user-level access to a machine, before then having to find another vulnerability within the system to escalate from user-level privileges to root/administrator-level privileges (e.g. by exploiting poorly secured configs of certain system services, reverse-engineering some administrative process, sometimes even further having to escape a container of some kind or having to penetrate yet another web service).

A global leaderboard was present where all participating students across Epitech were ranked by the amount of challenges they finished and the speed at which they did so - I finished first in the Strasbourg campus in both projects.

Epitech – Binary Security/Binsecu
May 2021– May 2021

This was a CTF project where we were tasked with finding flags on various remote systems which were specially created for the purpose, through finding vulnerabilities/exploits to get them to reveal the secret flags needed to fulfill the project, with the various challenges present on each system getting more and more elaborate as they went on.

In this CTF, most of the challenges involved having user access to a server and having to find a vulnerability in a custom-made SUID program (this would practically systematically involve reverse-engineering the program binary to inspect how it behaves and find where a vulnerability might reside) to get root access to the machine.

A global leaderboard was present where all participating students across Epitech were ranked by the amount of challenges they finished and the speed at which they did so - I finished first across all Epitech campuses in the whole year.

Epitech – Hunter
Nov 2020 – Nov 2020

This was a school project where we were tasked to recreate a game resembling Duck Hunt to some degree, where the player would shoot at moving targets on the screen. I decided to make a reproduction of Duck Hunt that would be as faithful as possible, which I did successfully.
Video of the project here: https://www.youtube.com/watch?v=TFZgotSo8wM

CSE2
Jun 2018 – Oct 2020

A project to make an open source exact equivalent of the executable used in the indie game Cave Story, in order to facilitate modding of the game. A lot of skills in reverse engineering, C and C++ were necessary to work on this. I was one of the biggest contributors on the project, which was essentially fully completed by the end of 2020.
Video of the project here: https://www.youtube.com/watch?v=VYRTTl5pk90

EDUCATION

Computer Software Engineering
Sep 2020 – Oct 2025

EPITECH – European Institute of Technology

I am studying the C and C++ programming languages, primarily under a Linux environment, while also learning project management skills.

Primary/Middle/High School
Oct 2011 – Jun 2020

Lycée Français Victor Hugo – Frankfurt, Germany

French international school in Germany. I obtained a Baccalaureat with top marks (i.e. “mention très bien”)

INTERESTS

Programming in general, I spend a lot of time contributing to projects I like. I’ve studied C and C++, along with assembly (on several different processors). I am also part of a number of online communities dedicated to programming.

I am interested in cyber-security, having obtained some experience in a few school-wide CTF competitions and one of my internships.

LANGUAGE SKILLS

I speak close to perfect English and have obtained a 965 on an TOEIC test. My mother tongue is French.