Gabriel Ravier

Looking for employment

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
POSIX/Unix Shell - Expert
CMake – Experienced
GNU Make – Expert
PostgreSQL – Experienced
Penetration Testing – Intermediate
TypeScript (Node.js) - Intermediate
Sybase – Intermediate

WORK EXPERIENCE

Commerzbank — Sep 2024 – Aug 2025

Intern (end-of-studies internship)

I worked as a software engineer at Commerzbank (second largest bank in Germany), on internal hedge accounting software (previously worked on over a period of 25 years by several dozen people in the company). I worked on cross-platform (Linux/Windows) C++ and SQL code. I worked with both German and Czech colleagues (with English or German as the working language).

I led a full migration of this software stack's backend database from Sybase to PostgreSQL, converting swathes of C++ and SQL code from Sybase-specific extensions to standard SQL features that PostgreSQL supports, and implementing connections to PostgreSQL with libpq instead of Sybase's proprietary libraries.

I also reduced the complexity of the build integration of several libraries through vendoring, so they could be integrated more easily with the rest of the codebase, and fixed memory issues found in C++ code, of which I found many by integrating valgrind into the project's CI and unit tests.

TrackIt — Jul 2021 – Dec 2021, Apr 2023 – Aug 2023

Intern

I worked as a software engineer at TrackIt, on their flagship software offerings, TrackIt and Tagbot, fixing numerous bugs and implementing new features across both backend and frontend, using Go and JavaScript. I worked with both American and French colleagues (English was typically used as the working language).

Those projects offered services for working with AWS and thus heavily interfaced with the AWS API for the purposes of helping manage one's AWS resources, giving me substantial experience with it.

I also contributed to several other projects involving AWS, which gave me further experience with AWS. Additionally, I helped speed up the resolution of a few severe production problems, and participated in several deployments of the above software, obtaining practical experience with Kubernetes in the process. I also worked on TrackIt's security services, participating in 1 penetration test and 3 security assessments.

I also created software, written in C++, Shell and TeX, which assists in the creation of security assessment reports. Notably, I wrote a program to automatically convert reports from the Prowler security tool into human-readable PDFs, and created a web service to make this tool accessible, using TypeScript and the AWS Cloud Development Kit (CDK), allowing use of this program from a website hosted on AWS.

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.

PROJECTS

Yalibct (Yet Another Libc Testsuite) — Aug 2022 – Present

This project, which I am currently working on in my spare time, aims to create a testsuite for libc to help in finding as many bugs as possible in existing libc implementations. As practically all programs rely on it in some way or another (it is at the core of every single program running or relying on any code and/or library written in C or C++ or using a runtime written in C or C++ (e.g. almost all programs written in C#, JS, Python, Ruby, Java, PHP, etc.)), bugs in it are particularly important, and this testsuite aims to find those.

As of early 2025, I have, through this project, filed more than 73 bug reports (usually accompanied by a patch fixing the issue) with major libc implementations such as glibc, musl, cosmopolitan and dietlibc.

Epitech - AREA — Jan 2023 – Mar 2023

This was a project to write an application alike to IFTTT/Zapier, in which users, from a web interface or a cross-platform Android/iOS mobile application, could create Triggers linking Actions and Reactions from various services. A trigger defined an action → reaction workflow - such that when an action occurs, a given reaction results. For instance, a trigger could be "when receiving an e-mail in Gmail, a message gets sent to a Discord channel", or "adding a track to a Spotify playlist sends an email through Outlook".

I wrote almost all of the backend code, handling all the business logic (frontends only serve as UIs that redirect requests to/from the backend server), implementing 15 actions and 16 reactions across 17 services. I also implemented a formatting system that allowed dynamic injection of data from actions into reactions in triggers (e.g. a trigger that, when a new Astronomy Picture of the Day is published by NASA, sends a Telegram message, could have the message be "NASA's picture of the day, $(title), has been published at $(url)" and the backend would replace the placeholders with the title and URL of the picture).

During the planning phase of the project, I experimented with other technologies, such as C++ with cpp-httplib, Apache Cassandra, Python with Flask, MongoDB, PHP, MySQL, Ruby on Rails, SQLite, or TypeORM, before settling on TypeScript with Fastify, Prisma and PostgreSQL.

Epitech - Arcade — Mar 2022 – Apr 2022

This was a project to write a complex “arcade-like” program that allows one to play various old games with many different graphics library, all through a common interface. In our group, we made 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.

I created the common interface, which was 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 any group’s core executable with games from other groups and a graphics libraries from other groups and have it all work without issues.

I primarily worked on:
- The Pac-Man game implementation
- The core executable
- The ncurses graphics implementation and some parts of the SFML and SDL graphics implementation
- Sound handling across all graphics implementations

Video of the project: 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 (per project) hosted on the TryHackMe platform, specially created for the purpose of this project.

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

A global leaderboard ranked all participating students across Epitech by the amount of challenges they finished and their speed in doing so. I finished first of 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 practically systematically involved 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.

CSE2 — Jun 2018 – Oct 2020

An open-source version of the executable of the indie game Cave Story, to facilitate modding of the game. Skills in reverse engineering, C and C++ were necessary to work on this. I was one of the biggest contributors of the project, which was essentially fully completed by the end of 2020.

Video of the project: https://www.youtube.com/watch?v=VYRTTl5pk90

EDUCATION

Computer Software Engineering — Sep 2020 – Sep 2025

EPITECH – European Institute of Information Technology

I spent five years studying various programming subjects at Epitech. Epitech’s teaching approach is project-based – there were far more projects to work on than classes. A majority of projects were focused around studying the C and C++ programming languages, primarily under a Linux environment but also quite often writing cross-platform (Linux/Windows) code, for various different purposes (command-line utilities, shells, video games, networking, concurrency, compilers, etc.)

Other subjects taught included Cybersecurity (several projects were focused around CTF or OSINT challenges), Haskell, Web Development, DevOps, project-management skills, and more.

Computer Software Engineering — Sep 2023 – Jun 2024

DCU – Dublin City University

I spent a year at DCU as an exchange student from Epitech, studying subjects such as compiler writing, OOP (with Java), full-stack web development (with Python+Django and Java+Spring), ML (with scikit-learn) and DevOps (e.g. through data processing using POSIX utilities and other tools such as jq or R)

Primary/Middle/High School — Oct 2011 – Jun 2020

Lycée Français Victor Hugo – Frankfurt, Germany

French international school in Germany. I obtained a Sciences Baccalaureat (i.e. a “Bac S” or “Bac scientifique”) with mathematics specialization and top marks (i.e. “mention très bien”)

INTERESTS

Programming in general, I spend a lot of my free time contributing to various projects. I’ve continually studied and routinely used C, C++, and assembly (on several different processors) since the age of 13, on various hobby, school and professional projects. I also participate in a number of online communities dedicated to programming.

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

LANGUAGE SKILLS

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