

charlotte ✨

"professional" computer fucker-arounder

✉ charlotte@som.codes

🔗 char.lt

📧 she/they/fae

📅 elder gen z (born 2000)

📍 england :/

🏴 anarchist

education

primary, secondary, and upper school

don't worry about it too much. i have my GCSEs and A Levels, but the actual grades are not on here on purpose

computer science bachelors loughborough

📅 2019 – 2023 (ongoing)

haha oops i'm taking four years to complete a three-year degree because i got burnt out while trying to do a full-time job and university at the same time

idiosyncrasies

remote work, flexible hours

the commute is a scam: if you'd like me to spend two hours of my day travelling, compensate me for that time.

my sleep schedule is wack: i don't have a 24 hour circadian rhythm so my sleep schedule ends up drifting off- and on- what is conventional.

flexible scheduling & asynchronous communication are extremely important to me

i hate your stack

i think a lot of computer software is over-engineered. "treat your servers like cattle, not pets" is a great illustration, actually. everyone loves how the meat industry operates, right? anyway:

- i am an expert in Docker (please don't make me use it)
- i can get my way around Kubernetes (please don't make me use it)
- just run your garbage on plain linux

adhd or something

i am motivated primarily by fun & dopamine release. i don't want to have to choose One Thing, i like floating around.

i don't think my output will increase from working more than 12 hours of work a week, either. i get enough done

interests

money

(i'm interested, but not a fan)

📅 my cost of living is four digits monthly. why?

yeah so like everyone's gotta do it, right?

i like having a comfortable amount of the resources i need to live, and since we live in a transactional society money is one of those resources.

once i have enough wealth and income to support my lifestyle and deal with emergencies, i would turn my attention to providing aid to my peers.

therefore if you would like to offer me a place where i can put my skills to use, one of the things i would probably expect in exchange is money.

programming (and general computery)

📅 since like forever ago

📍 in my bedroom

i started programming when i was a very small child because apparently unnoticed-yet-omnipresent gender dysphoria makes you dislike Being Outside for some reason. it's one of the more productive forms my escapism took, i would say.

i think i was lucky to grow up around the time that computers were advanced enough to let you get actual monstrous-amounts of calculation done but not advanced enough where digital rights management was at the point where a device you buy is not completely your property.

i also had the privilege of growing up in an environment with a dad who works in technology (he's an Oracle DBA) and so having someone who is prepared to clean up my mess let me start exploring further down the tower of abstraction from a younger age.

projects

watch party: rust web service for video playback sync

🔗 git.lavender.software/charlotte/watch-party

📅 24th oct, 2021

a one-day project. so basically we have a movie night every Friday and we were using Metastream but it has lots of reliability issues because of WebRTC being flaky on badly-behaved networks.

the way our movie nights work is that I download the video a few hours before it starts, then transcode it for web-optimization, and put it on my webserver, then we use Metastream to share an HTML page that i have to write because of how Metastream iframes.

phoebe: a discord ↔ matrix bridge

🔗 git.lavender.software/charlotte/phoebe

lots of work, for what is essentially two bots in a trenchcoat.

anyway there's a focus on high-quality (minimal presentation difference) bridging, so I have like actual bespoke parsers for the chat formats for the chat networks. for matrix, that means parsing HTML; and on discord, that means processing an unspecified Markdown spinoff which seems to be a contextual language for some reason.

to be paid for 40 hours without hearing complaints, though.

languages

- english - native
- french - familial (C1)
- korean - hobby (B1)
- spanish - school (B2)

web-published nonsense

circumventing the JVM class-file verifier

🔗 som.codes/jvm-force-no-verify

i got the content for this post for free back when i was working on paramorphism, and decided to write it up with a little "i'm available ;)" footnote because i wanted to get hired.

it hit the front page of hacker news and i got a few job offers but they were all bad

reverse engineering GTA V's stunt jumps

🔗 hackery.site/writing/gta-v-stunt-jumps

i spent like two days banging my head against a wall trying to figure out some mathematics through the scientific method instead of taking 20 minutes to open IDA or something and just reading the assembly.

cyberdiscovery's "valhalla" challenge

🔗 hackery.site/writing/cyberdiscovery-valhalla

when i was in school i was a big computer security nerd so this like government agency subcontractor sent me a cool invite-only challenge and i solved it and they gave me a badge for doing it. it's a shame the solution is so boring.

circumventing cisco duo's authenticator app

🔗 som.codes/cisco-duo-bypass

university tried to make me use some proprietary garbage app to log in to my account, but i didn't want to. so here's a write-up of what i did and it's paired with the release of a Rust program that extracts the HOTP keys from the service for you.

in the business we call this "spite-driven development"

"professional experience" (lmao)

force software ("splashforce"): artificial monopolization of luxury clothes items

🔗 splashforce.io

📅 2020 – present

splashforce is a program designed to buy expensive sneakers automatically. why? there seems to be a tonne of money in this space for some reason.

in effect, the program facilitates scalping, which is a Very Cool business model where you are a useless middle-man and extract extra value by virtue of "the product is scarce because i bought them all". kind of like landlording, i guess. anyway, i do a bunch of stuff:

- cronet: custom patches for & isolation of chromium's HTTP stack.
- communication between an electron (node.js / web javascript) frontend and a go backend.
- anti-piracy, reverse-engineer-deterrent releases for the go backend, because we can't trust our customers i guess.
- reverse engineering & circumventing bot-prevention measures on websites and android apps. (webassembly, javascript, more custom browser patches, android, java, smali).

overall, i get to work with a bunch of different technologies and it really satiates my adhd brain: there's rust, go, java, elixir, c++, chromium (cronet), firefox (necko, spidermonkey), webassembly, typescript, and javascript.

jvm obfuscator: facilitating the concealment of evil self-employed (🔗 paramorphism.dev)

📅 2017 – present

a code obfuscator is designed to make code harder to reverse-engineer, because the freedom of information is *bad* actually.

i wrote the program as well as my own jvm bytecode debugging tooling - it's pretty neat actually; i'd release the tools if it weren't completely counter to my profit interests.

if you care about what kind of tech i am capable with, i am working primarily with kotlin and java here, but there are optional opaque native components written in rust and zig that are injected into obfuscated programs.

the average yearly usd revenue from i get paramorphism sales is 4 figures. it doesn't pay my rent but i guess it pays for some fun toys sometimes. if it paid my rent, you probably wouldn't be reading this.

novelty custom-mouse-based game-hacking: for frustrated gamers and e-sports grifters with too much money

self-employed (🔗 nullptr.pro)

📅 mid-2018

i promise, competitive gaming has more shady shit going on than the tour de france.

this was a fun, one-off hardware project (the site is down now). we used thunderbolt 3's PCIe direct memory access capability to edit running game processes' memory spaces, without needing custom software to run on the (windows) target computer.

we sold 10 mice for 10 btc each, but i spent all that money on frivolity instead of retiring (also bitcoin was worth a lot less).

- firmware: c, c++, duktape engine (javascript), all on armv7.
- config tool: vala, javascript
- hacking: usb, PCIe, windows nt physical memory layout
- individual game scripts: javascript